FIRE ENGINEERING

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The Journal of the Fire Protection Profession Since 1877

MARCH • 1959

Official Los Angeles County photo

Raging brush fires destroyed apparatus as well as homes and watershed cover as California's 1958 fire season reached a climax—See story on Page 188

IN THIS ISSUE . . .

Fighting Natural Cover Fires
Further Study of Soft Suction
New Phone Alerting System

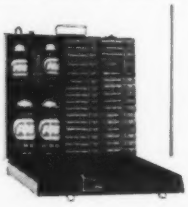
if your men aren't wearing Bullard helmets... head protection is costing you too much!

MORE FIRES FOR YOUR MONEY!

Expose rugged Bullard HARDBOILED fire helmets to searing flame (high as 2,000° F.), freeze them, soak them in boiling water... these grueling punishments won't soften or weaken a Bullard fire helmet's protective characteristics! This is the only fire hat that exceeds Federal specifications. No Fire Helmet is tougher, yet few are as comfortable to wear. Light and cool on your head... made from non-conductive fiber glass they weigh only 20 ounces. In a choice of permanent non-fading colors, these helmets are equipped with replaceable suspensions that adjust to all standard head sizes. Today, ask to see how Bullard Fire Helmets make your budget go further... help you fight more fires for the money!

Stop First Aid Water Damage

New Bullard Fire Department First Aid Kits are 100% water proof. Every supply is separately sealed in Polyethylene wrappers. Includes the new approved, spray-on, pain killing burn treatment... *First On Burns.*



Economy Gas Masks

Equip your units with gas masks at a 12% saving. Bullard "SMOKE-EATER" gas masks contain exclusive money saving filter for toxic dusts, fumes, mists, fogs, and smoke.

BULLARD
INDUSTRIAL SAFETY EQUIPMENT

E. D. BULLARD COMPANY SAUSALITO, CALIFORNIA

See your local fire equipment dealer or write for catalog of complete line of fire helmet accessories.

Double Range Warning

Add a white-hot, seething sunbeam of warning to your existing red lights.

SOLARAY ***projects*** **its beam beyond the range of color signals,**

punctuates **the flashing red with white and**

pinpoints **approaching apparatus at maximum distance.**

At any given candlepower, white light is far more effective than color. The SOLARay shining to the front of the vehicle moves a band of white light vertically, to flag attention at the earliest possible moment.

The SOLARay is not a substitute for existing warning lights, but provides *additional* warning and an *additional* margin of safety.

The SOLARay #18 (illustrated) can be furnished as a separate light for fender mounting. It can also be furnished as *the* warning light in powerful FEDERAL Coaster Sirens such as models C-6, 78 and 67. The SOLARay is now standard equipment in these sirens. Ordinarily furnished with a red lens it is more effective when a white lens is specified on vehicles already equipped with Beacon rays or other red warnings. Ask for Bulletin 355.

FEDERAL SIGN and SIGNAL Corporation

T.M.

6702 S. State St., Chicago 19, Ill.

FIRE ENGINEERING

VOL. 112 MARCH, 1959 NO. 3

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Our Pride Is Showing

Recently we received a copy of the annual report of Fire Chief George Courser, San Diego, Calif., to his governing body. In summarizing his department's otherwise unclassified activities, the chief stated the following:

"Members of the Fire Department Sports Club, at their own expense, have subscribed to the monthly magazine FIRE ENGINEERING. It has long been rated the number one publication serving the fire fighting profession in the amount and quality of its fire protection and suppression information and editorial content."

Naturally we are proud to have Chief Courser give us such a gracious and unsolicited testimonial in an official report. We have heard of and read statements of similar nature in the past and our reaction is one of human pride and happiness.

We truly appreciate these very complimentary remarks and reaffirm our intention to do everything in our power to continue to be worthy of them. With the continued assistance and encouragement of the fire service we know we cannot fail.

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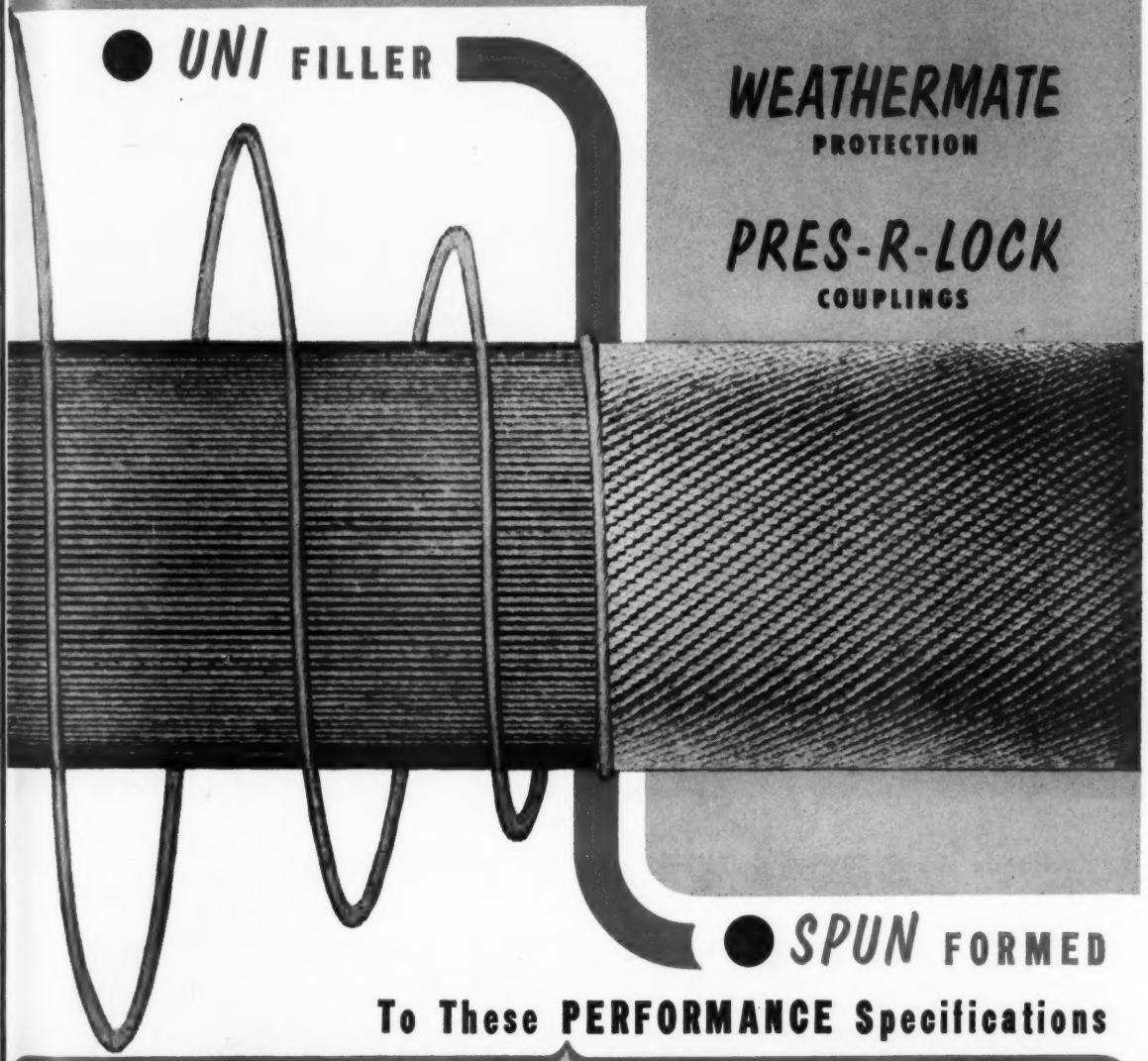
UNISPUN FIRE HOSE

● UNI FILLER

WEATHERMATE PROTECTION

PRES-R-LOCK COUPLINGS



● SPUN FORMED

To These PERFORMANCE Specifications

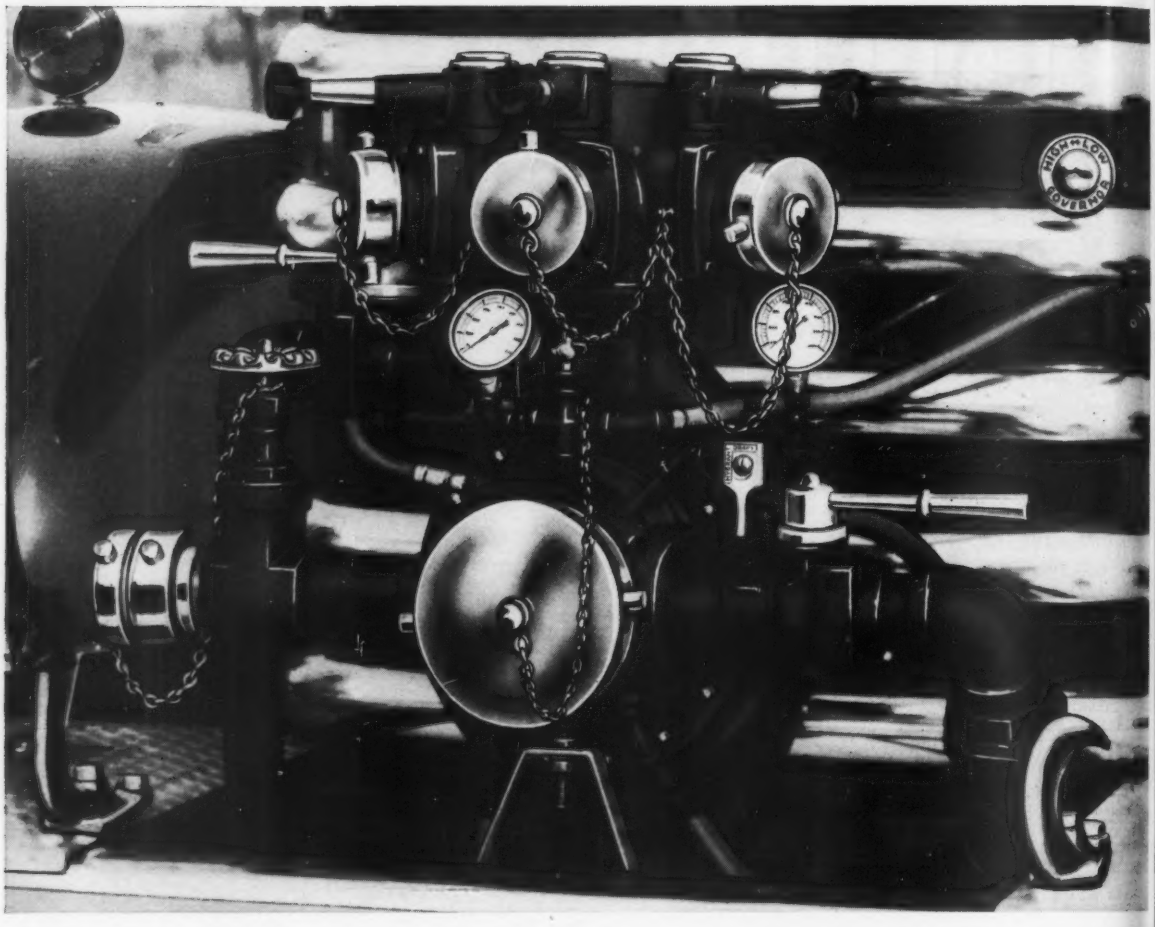
ZERO TURNS • ZERO WARP • ZERO RISE

FABRIC FIRE HOSE COMPANY

Continuous Uniform Single Filament Filler Co-Axially Spun Fire Hose

SANDY HOOK, CONN.

IN CANADA *Pierre Thibault* CANADA, LTD., LTEE, PIERREVILLE, QUEBEC



NOW... A 750 GPM FRONT MOUNTED PUMP

BARTON-AMERICAN MODEL UA-75

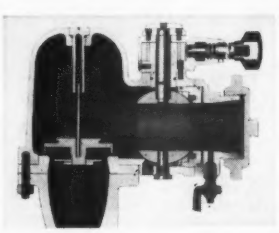
Look at the advantages this biggest Barton-American front mounted pump gives you—extra advantages that help you "kill" fires in a hurry:

The UA-75 is a Class A pump rated at 750 gpm at 150 lbs. Handles *three* 2½" hose lines for volume—and delivers high pressure to 400 lbs. for effective fog streams. You can fight brush fires *while truck is moving* . . . and "nose" down to pond or stream to draft water inaccessible to midship pumpers.

Exclusive, interlocking pump clutch has direct mechanical connection. It *can't* slip! Frost-proof design has been *proven* in thousands of pumps. *Engine vacuum primer* is positive, fast and frost-proof. *Direct controls* make operation fast and easy. Accessibility and simple pump construction cut maintenance time.

The UA-75 includes *factory engineered* p.t.o. shaft, universal joints and pump gear ratios best for *your* truck's engine.

It will pay you to investigate the top-quality, precision-built Barton-American Type UA-75. It *costs less* to buy, install and maintain—because it's simpler!



Has Ball-Type Locking Valves.

Regulates volume as you desire. A quarter-turn of the handle locks it positively in any position. Check valve eliminates need to close hose lines to prime pump. Smooth operation—heavy duty construction.

★ AMERICAN ★
FIRE PUMP COMPANY

WRITE TODAY FOR BULLETIN 8331.

P. O. BOX 219-A BATTLE CREEK, MICHIGAN

B.F.Goodrich

Heavy, bulky hose bows out to a lightweight

B.F.Goodrich hose is easier handling, saves time at fires

THOSE tightly coiled lengths of B.F.Goodrich hose will soon replace all the bulkier hose in this fire department, according to Chief Charles L. Holman, DeLand Fire Department, DeLand, Florida.

"It's very light compared to our other hose", says Chief Holman. "When we rack it, we have space for hundreds of extra feet on our truck bed. It's no effort to coil or rack because it doesn't twist."

This B.F.Goodrich hose is actually 22% lighter, much more flexible and stronger than ordinary hose. That's because the "filler cords" which go around the hose and carry the load under pressure are made of Dacron fiber. These cords are thinner, yet stronger than cords used in reinforcement on heavier, bulkier hose. It also has B.F.Goodrich end protection. This extra layer of hard-woven cords extending 12" from the coupling adds 100% more strength to the coupling area.

Another important safety factor which can be specified is Superseal protection. It gives 10 times more resistance to mildew and rotting than ordinary treatments, prepares the hose for all kinds of weather. And, most important, the Superseal treatment costs no more than ordinary treatments.

When you want a hose that's light, flexible, and will last longer than any other hose sold, get B.F.Goodrich hose with the Superseal protection. Your B.F.Goodrich distributor can tell you more about it, or write *B.F.Goodrich Industrial Products Company, Dept. M-540, Akron 18, Ohio.*

B.F.Goodrich *fire hose*

Mighty Mack Thermodyne ENF-707C develops a fully usable 276 hp at 2600 rpm. Smaller Mack engines range upwards to 200 hp.

MACK ENGINE FEATURES THAT ADD UP TO SUPERLATIVE PERFORMANCE

Modern, overhead-valve design for greatest efficiency · combustion chamber and manifold design that gives optimum fuel mixture for most complete combustion and fastest starts · heavy-duty, *seven*-bearing crankshaft with 4″ diameter main bearings —largest in the industry—electrically hardened for surface hardness with interior toughness · valve lifters faced with tungsten carbide to render them immune to wear and assure long cam and lifter life · full-length water jackets, plus directed water flow, to promote uniform cylinder temperature and more efficient lubrication · angle-split connecting rod bearing caps to permit largest bearings and easier maintenance.

MACK ENGINES—Packed with power and performance

Heart of Mack fire apparatus performance is the famous Mack Thermodyne® engine—crafted to the industry's highest standards . . . tested through every stage of manufacture . . . designed for every fire-fighting need. Such is the efficiency of Mack engines that they outclass engines even of greater comparable rating . . . in both road and pumping performance.

Mack engines are made to work in harmony with all other Mack quality components—clutches, transmissions, front and rear axles, and cabs. Remember, Mack controls the performance of its finished product by making more of its own components than any other manufacturer and to higher standards. *You can depend on a Mack.* Mack Fire Apparatus, Sidney, Ohio. In Canada: Mack Trucks of Canada, Ltd.

Apparatus as you want it. From the wide selection of Mack models you can have cab-forward or standard units . . . with conventional or automatic transmissions . . . with standard, two-stage pump or the new Uni-Control Hi-Stage pump . . . with air or hydraulic braking systems . . . with the gear ratios and built-in extras that you need.

MACK
FIRST NAME FOR
FIRE APPARATUS

COMPLETE LINE OF PUMPERS—500 to 1250 GPM . . . SQUAD AND HOSE WAGONS . . . AERIALS 65′ to 100′ . . . COMBINATION LADDER TRUCKS

MOTOROLA
"Handie-Talkie"®

2-WAY POCKET RADIO

pocket receiver (actual size)

All new... makes your fire fighters a closer working, *better* working "team"

Now fire departments can utilize radio more fully than ever. Instant 2-way communication with key personnel afoot—on all "fronts"—means complete coordination and greater-than-ever fire-fighting efficiency.

Here are individual receivers and transmitters that can be carried in the pocket or worn on the belt to give excellent local 2-way coverage.

The new "Handie-Talkie" Pocket Receiver is fully transistorized for low power drain and high reliability. With the most powerful audio output available, messages can be clearly heard even in noisy areas. Available with rechargeable battery, or standard mercury cells which give up to 200 hours of operation. Write for complete information today.

The companion "Handie-Talkie" Pocket Transmitter has 2 to 4 times the power of similar units. With the Pocket Receiver you can have complete, lightweight, *personal* 2-way radio communications.

MOTOROLA 2-WAY POCKET RADIO

Motorola Communications & Electronics, Inc., 4501 Augusta Blvd., Chicago 51, Ill. • A Subsidiary of Motorola Inc.

TRIPLE ACTION HPF* for Fi

*John BEAN HIGH PRESSURE FOG the original high pressure (850 psi) fog system

John Bean's High Pressure Fog system is proven and distinguished from all other fire fighting methods. Microscopic fog particles, created by the original John Bean High Pressure Fog Pump (operating at 850 psi), are discharged through the patented No. 29 Fire Fighter Fog Gun. When driven at high velocity to the base of a fire, these fog particles have many times the surface area and heat absorption power of a solid stream of water. So much so that . . . **one gallon of water as high pressure fog has the fire killing capacity of ten or more gallons discharged in a conventional stream.** You can extinguish more than 95% of your fires faster . . . use only 10% or less of the water usually required . . . and do it with greater safety and with little or no water damage.

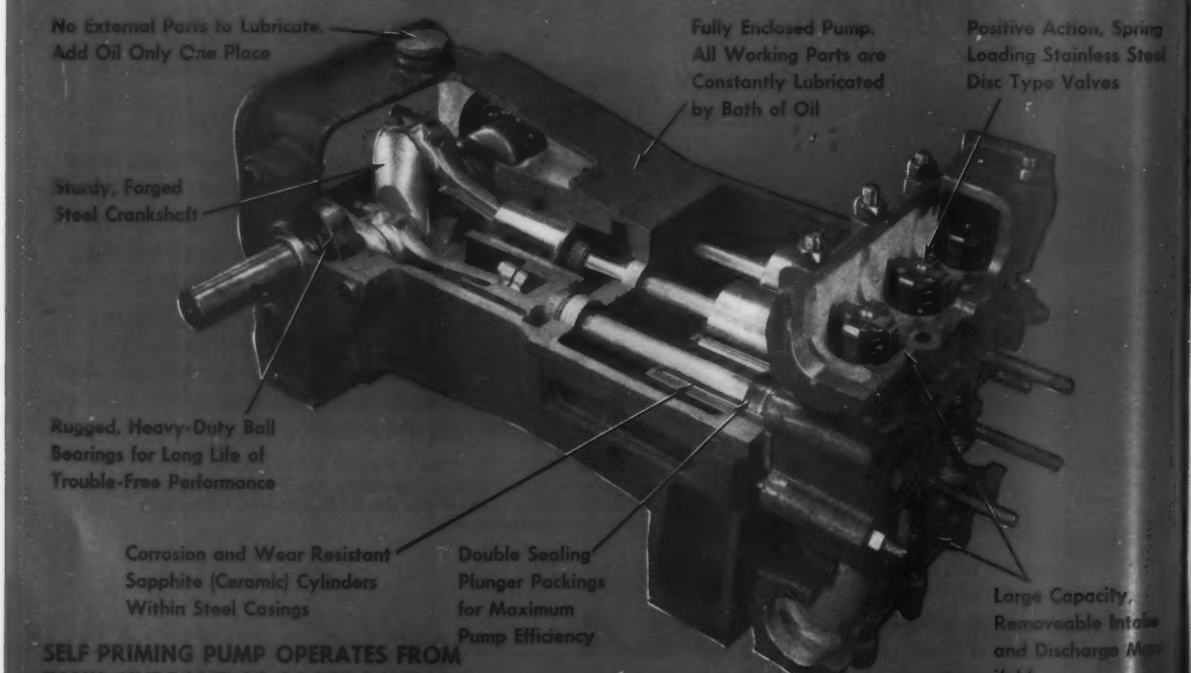
HPF's 3-WAY ACTION KILLS FIRES FASTER BECAUSE

1. IT COOLS – As it contacts a fire, John Bean High Pressure Fog instantaneously absorbs heat at the the rate of approximately 280,000 BTU per gun, per minute.

2. IT SMOTHERS – By shutting off oxygen from the fire. As the super fine fog particles absorb heat, they expand 1700 times to form a smothering blanket that displaces the combustion-supporting oxygen.

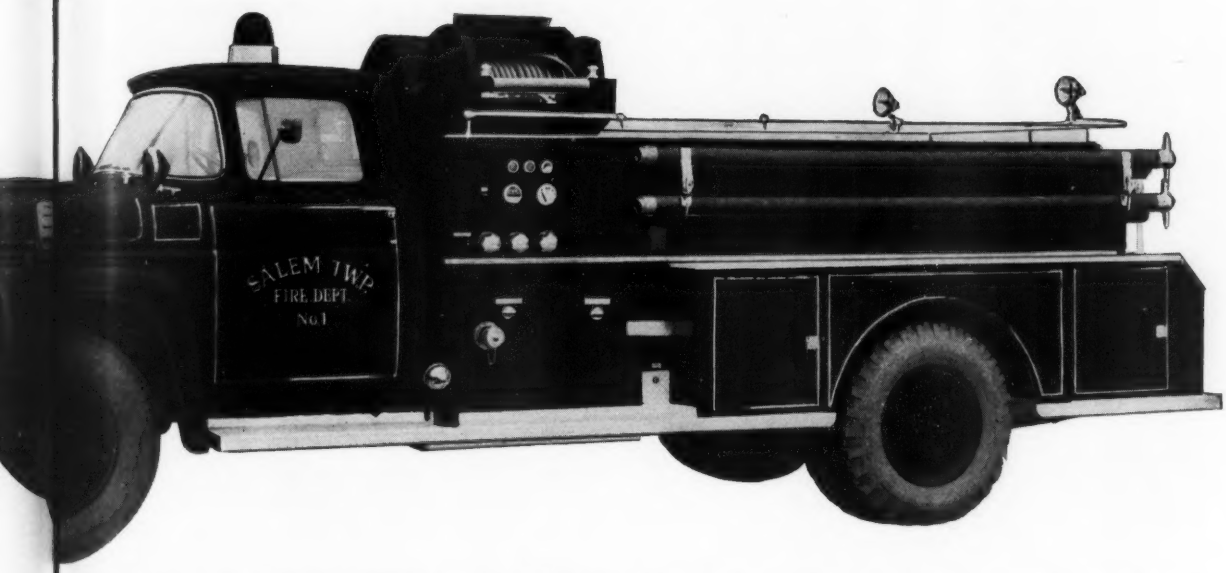
3. IT ISOLATES – By throwing a barrier of "cold steam" between the burning gases and their source of fuel.

The John BEAN HIGH PRESSURE PUMP – rugged heart of HPF Fire Fighters


No External Parts to Lubricate. Add Oil Only One Place
Fully Enclosed Pump. All Working Parts are Constantly Lubricated by Bath of Oil
Positive Action, Spring Loading Stainless Steel Disc Type Valves
Sturdy, Forged Steel Crankshaft
Rugged, Heavy-Duty Ball Bearings for Long Life of Trouble-Free Performance
Corrosion and Wear Resistant Sapphite (Ceramic) Cylinders Within Steel Casings
Double Sealing Plunger Packings for Maximum Pump Efficiency
Large Capacity, Removeable Intake and Discharge Manifolds

SELF PRIMING PUMP OPERATES FROM TANK, HYDRANT OR DRAFT SOURCE

Fire Fighting with a 3-WAY PUNCH



STANDARDIZED FOR ECONOMY—John BEAN HPF Fire Fighters mount on most standard truck chassis

ONLY HPF FIRE FIGHTERS GIVE YOU ALL THESE FEATURES

Enclosed Heated Reel Compartments

Removable enclosures winterize the two reel compartments. These, as well as pump, valves, gauges and controls, are warmed by engine heat.

400 Feet of High-Pressure Hose

The 200 feet of special, 5000 psi discharge hose on each reel can be easily handled by one man.

20 Feet of Suction Hose

Standard equipment includes two 10-foot lengths or 2½ inch hard suction hose, complete with suction strainer.

Power Rewind Hose Reels (Optional Equipment)

For faster, easier hose pick-ups, both high pressure hose reels may be equipped with powered rewind mechanisms. Hose reels with hand cranks are standard equipment.

Lighted Control Panel

All gauges, valves and controls are centralized for instant operation—illuminated for safety and easy reading at night.

500-Gallon Six-Compartment Tank

Smooth cornering, starts and stops assured by six-compartment tank with low center of gravity. Prevents undesirable water surge.

Power Take-Off For In-Motion Pumping

Pump is coupled to engine so that pump can be operated for fighting grass, brush and forest fires, while truck is moving. Control for engaging pump is located conveniently in the cab.

Over 45 Cubic Feet of Weatherproof Storage Space

Four large capacity, lighted compartments are built in for proper storage of accessory equipment. Easy opening flush-type door latches.

When minutes count . . .
and you need instant action
. . . or when water's scarce . . .
You can depend upon John BEAN
Original ***HIGH PRESSURE FOG***

WRITE TODAY FOR COMPLETE DETAILS

JOHN fmc **BEAN**

Lansing 4, Michigan
Dept. 126

San Jose 1, California
P. O. Box 145

A Division of Food Machinery and Chemical Corp.

NOW.... you can pre-select the stream before the "BIG STICK" goes into action!

ELKHART JUMBO MYSTERY NOZZLES

with
**stream indicators for*
pre-selecting *stream*...

**patented*

There's no guess work in selecting the stream you want before these new JUMBO Mystery Nozzles go to work. The new J and JN-200 Nozzles now feature indicators for pre-selection of stream... and this pre-selection is done by merely turning the barrel until the desired stream selection is opposite the arrows. Straight Stream 30°—60°—90° fog are shown on the indicator. "O" ring type packing assures a more lasting seal. Elkhart's newly patented inner construction now affords easy operation under any pressure. For further information please write—

ELKHART BRASS MFG. CO., INC. ELKHART, INDIANA

In roaring steel mills . . . in vital oil fields throughout the world . . . at throbbing power plants large and small . . . behind the guarded gates of highly-secret atomic installations and missile centers—wherever complete fire protection is important, you'll find Ansul. • Industry knows that only Ansul digs deep into basic fire research, that Ansul can be depended on for the best answers to fire protection problems. • More than 20 years ago Ansul began this search for new and better ways to prevent fire loss. Ansul pioneering continues today with the introduction of new, improved fire fighting equipment and advanced training techniques. • Put this knowledge and ability to work to help you build the complete fire protection program that could someday save your plant from destruction. • Start with Ansul people. Draw on their technical skills, their practical experience to solve the fire protection problems you have. ANSUL CHEMICAL COMPANY, MARINETTE, WISCONSIN.

new products, new ideas for better fire protection

ANSUL

REFRIGERATION PRODUCTS
FIRE FIGHTING EQUIPMENT
INDUSTRIAL CHEMICALS

TWO NEW LEECE-NEVILLE A
SYSTEMS WITH BUILT-IN S

New 2-piece systems offer improved performance and reduced maintenance expense

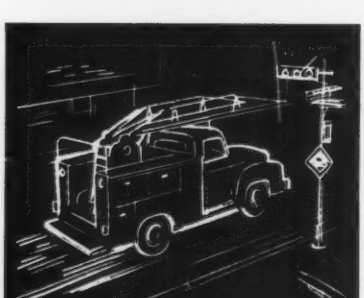
Advanced Leece-Neville engineering has made possible the elimination of separately-mounted Selenium rectifiers in L-N Alternator-Generator Systems! New improved Silicon Cell rectifiers are *built-in* as an integral part of the alternator itself.

First introduced in December, 1957, several hundred two-piece systems were installed for actual in-service tests. After hundreds of thousands of miles of service—with extraordinary results — Leece-Neville announces availability of Standard and Heavy-Duty Systems with built-in Silicon rectifiers.

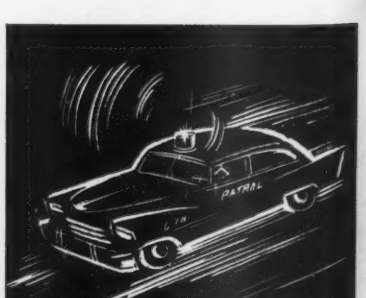
New Standard Type No. A001-2002AA —60 Amp rating, 19 Lbs.

OUTSTANDING IMPROVEMENTS IN PERFORMANCE!

Idle current increased 42% to 27 Amps— (*increase over previous standard system*).

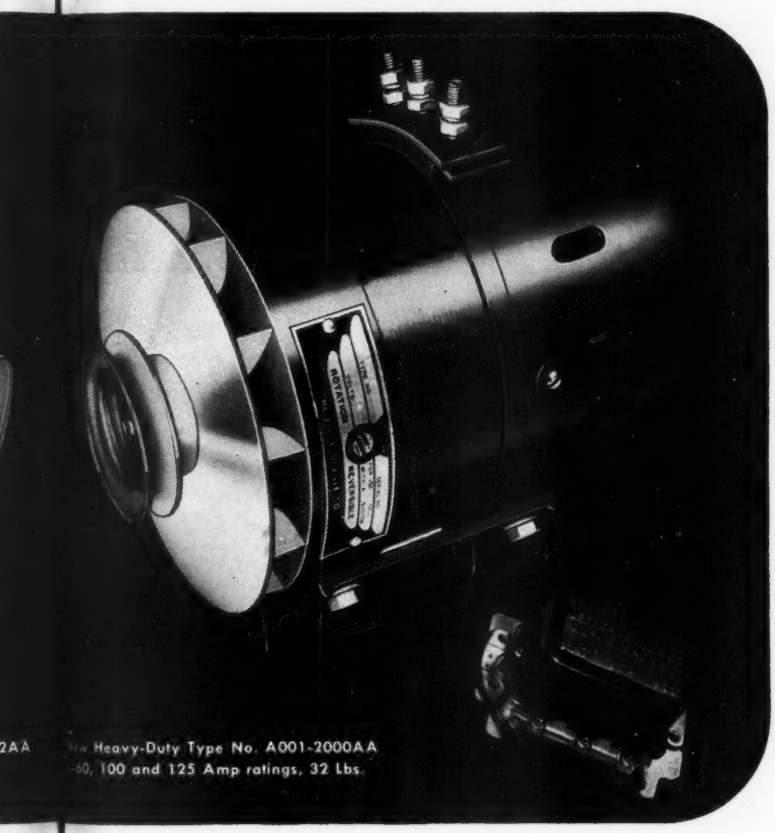


60-Amp current at city speeds—*an increase of 20%.*



60-Amp current at high speeds—*again, an increase of 20%.*

E ALTERNATOR-GENERATOR
N SILICON RECTIFIERS



2AA ...w Heavy-Duty Type No. A001-2000AA
...60, 100 and 125 Amp ratings, 32 Lbs.

PLUS THESE COST ADVANTAGES!

1. Reduced installation costs – the expense of brackets and labor in mounting a separate rectifier is eliminated.

2. Reduced maintenance expense — whereas separate Selenium rectifiers must be replaced as a unit when failure occurs, new built-in Silicon rectifiers are made up of six Silicon cells. Each Silicon cell can be replaced individually at far less expense. Trouble is easier to locate. Inventory can be reduced.

3. Comparable original cost – considering the elimination of fittings and labor for mounting separate rectifier, cost of the new two-piece systems is comparable to that of previous three-piece systems.

4. Other advantages—simplified wiring, savings in space requirements, greater heat resistance, greatly improved performance and longer life.

Convert your L-N three-piece systems to new two-piece systems with new CONVERSION KITS

Your present L-N equipment is not obsolete! Low-cost L-N conversion kits are available which enable you to convert current three-piece systems (Standard and Heavy-Duty Basic Model Nos. 5370GB and 5412GA), to two-piece systems with built-in Silicon Rectifiers. All you have to do is (1) remove old end housing and Selenium rectifier; and (2) install new end housing which has built-in Silicon rectifier. *Result:* your old system is completely up-to-date, with all advantages listed for new L-N two-piece systems.

QUALITY AUTOMOTIVE ELECTRICAL EQUIPMENT
Leece-Neville
SINCE 1909

THE LEECE-NEVILLE COMPANY
CLEVELAND 3, OHIO
Dept. MF-3

- ☐ *Please send literature on new L-N Silicon Systems.*
- ☐ *Please send data on new L-N Conversion Kits.*
- ☐ *Have your salesman call on me.*

NAME_____ **TITLE**_____

COMPANY_____

ADDRESS_____

CITY_____ **STATE**_____

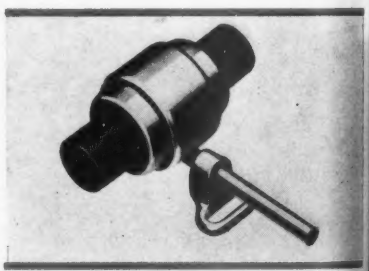
Safety Minded CHICAGO
TELLS A LIFE NET STORY

Chicago,
December 1, 1958
. . . Truck 35 arrived and also began catching children in nets . . . acting under orders firemen began dropping children into nets. This resulted in saving many lives.
Chicago
Oct. 1, 1957
informed by F.A.O. that woman threatening to jump . . . saw her perched on 6th floor window . . . ordered life net opened and positioned men . . . in less than a minute she rolled out window and was properly caught in net . . . no injuries were sustained
Chicago,
Jan. 27, 1959
. . . firemen rescued several people from third floor window ledges . . . at least three persons leaped into firemens nets.

AND SPECIFIES "ATLAS DELUXE" LIFE NETS!

LIKE SO MANY OTHER CITIES, the City of Chicago Fire Department now SPECIFIES only ATLAS "DELUXE" life saving nets. After extensive tests, the Chicago Fire Dept. is convinced that ATLAS life nets are more dependable, safer . . . and more economical because they last so much longer.

Here's only one of the many reasons which have made ATLAS "DELUXE" the foremost name in life saving nets, outselling all others.



ATLAS patented DUAL SHOCK ABSORBERS, 32 of which are evenly spaced around strong, sturdy frame of "DELUXE" model, are specifically engineered to absorb maximum impact and to prevent possible injury as the result of jumps from excessive altitudes.

Just a few of the cities equipped with ATLAS "DELUXE" life nets . . .

NEW YORK	BILOXI	CINCINNATI
LOS ANGELES	BIRMINGHAM	MILWAUKEE
NEW ORLEANS	PROVIDENCE	GRAND RAPIDS
SAN DIEGO	FARGO	MIAMI
TUCSON	BOISE	WINSTON-SALEM
EL PASO	ATLANTA	PHILADELPHIA
FORT WORTH	NASHVILLE	NEWARK
OKLAHOMA CITY	LOUISVILLE	BOSTON
KANSAS CITY	FORT WAYNE	CHICAGO

And Hundreds More

Be sure to get only the PROVEN BEST.

Specify —

"ATLAS" LIFE SAVING NETS

So Economical Because They Last So Much Longer

ATLAS **SAFETY EQUIPMENT CO., INC.**
174 NORTH 10TH ST., BROOKYLN 11, N. Y.

NEW!

Complete Training Tower engineered and constructed by ATLAS including all modern firemanic facilities.

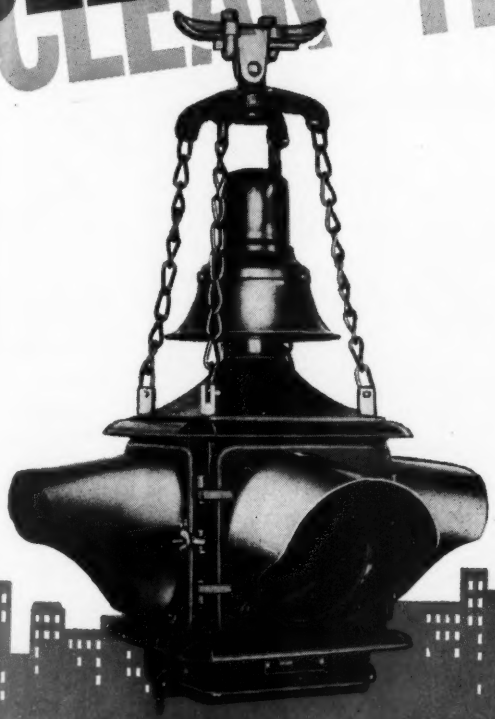
Write for details.

CLEAR THE LANE

say it twice with this

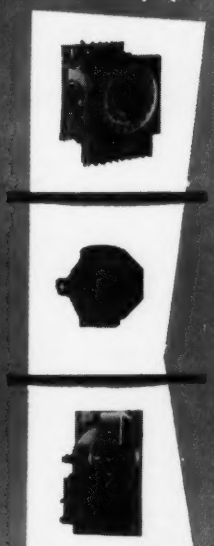
EAGLE

BEACON SIREN



Drivers see the flashing light over the noise of traffic and car radios, hear the siren warning though vision may be obscured. This double-warning, double-safety unit may be suspended at fire lane intersections, or mounted on mast arm or post top. Non adjustable beacon-siren like that shown may have flasher mounted internally.

Directionally adjustable units also available, for post top mounting only. For complete details on Eagle Beacon-Siren units and related equipment send coupon today.



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TIME LIMIT SWITCH
Controls beacon-siren "on" interval. Adjusts from 2 seconds to 20 minutes.

PUSH BUTTON SWITCH
Weatherproof, actuates Time Limit Switch shown above.

TWO-CIRCUIT FLASHER SET
One circuit at sixty flashes per minute operates the flashing beacon. The other circuit operates at 30 "wails" per minute.

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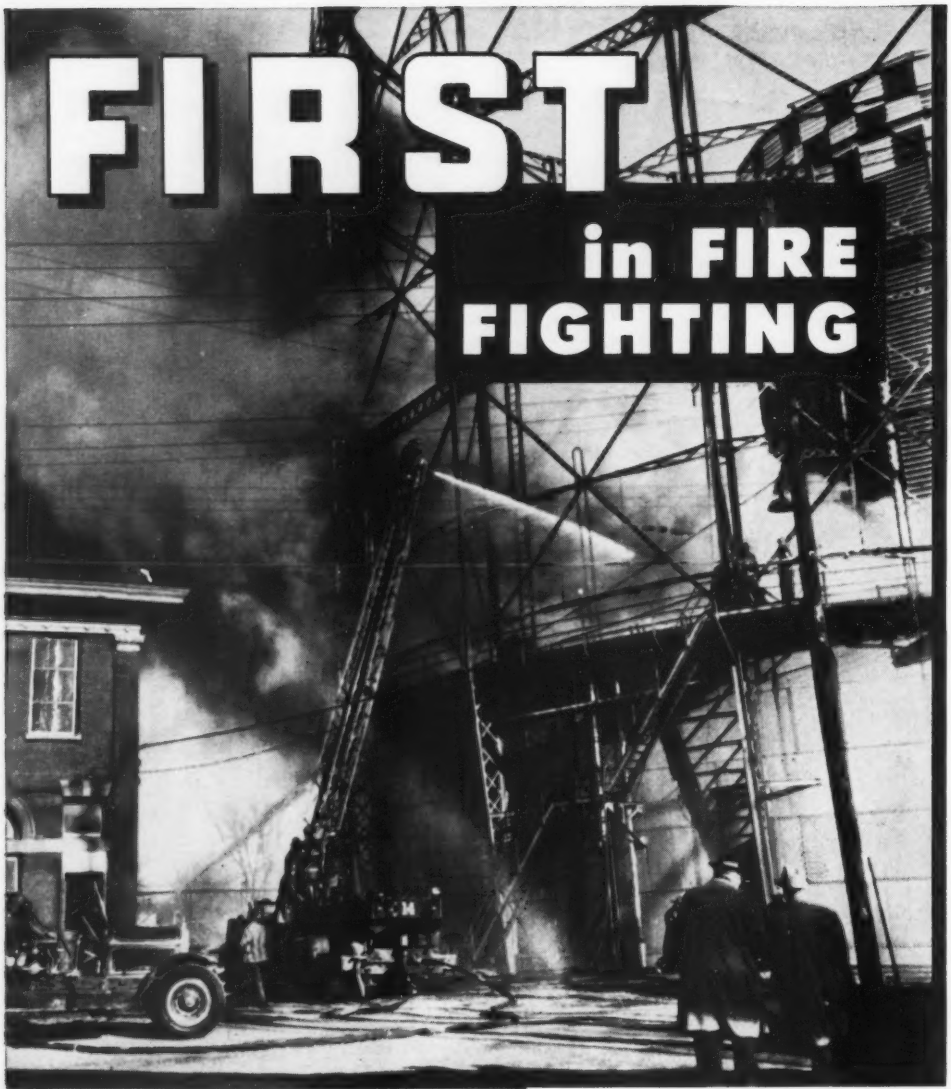

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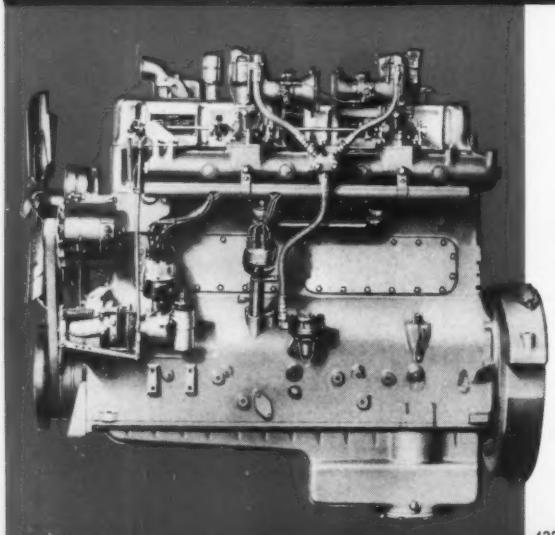

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Six cylinders, 5⅜-in. bore x 6-in. stroke, 817 cu. in. displ., with counterbalanced and vibration dampened 3½-in. 7-bearing crankshaft; dual downdraft carburetion; dual ignition; precision extra high capacity bearings; removable wet type cylinder sleeves, aluminum pistons, overhead valves with Stellite-faced exhaust valves and seats. Arranged for full electrical equipment and all modern accessories. Get Bulletin 1662.

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RUBBER COVERED FIRE HOSE

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With "RED-FLEX" your budget is **lower** because you do not need Hose Towers, Mechanical Dryers, Humidity Machines, Excessive Spares.

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The tough red Neoprene cover offers highest resistance to abrasive wear and the actions of chemicals and oils.

SIZES: 1½", 2", 2½"—SINGLE JACKET—50' LENGTHS—400 LB. TEST

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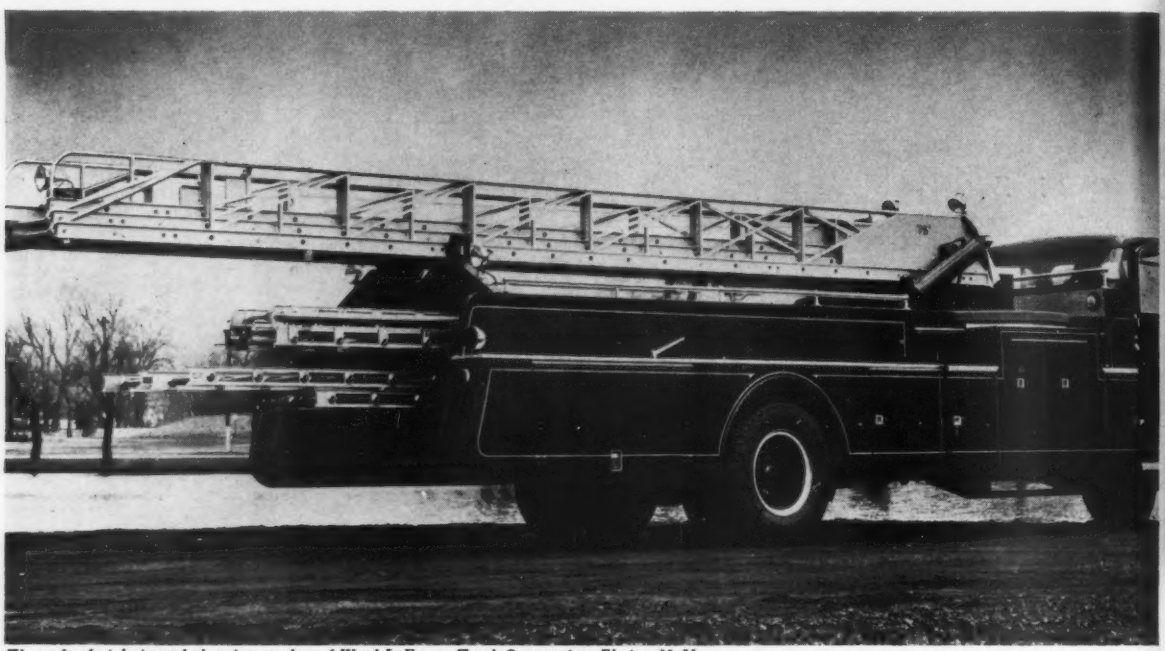
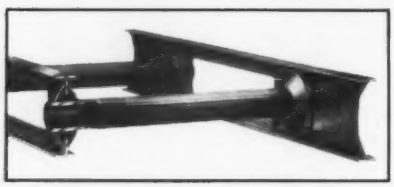
This 75 ft. Aerial is equipped with lightweight Alco-Lite Ground Ladders

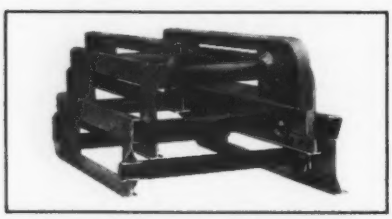


The 75 ft. Aerial pictured above is a product of Ward LaFrance Truck Corporation, Elmira, N. Y.



Rungs won't twist, turn or break off!

Slip-resistant, tubular 1¼" aluminum rungs are permanently secured to T-channel side rails by means of exclusive Alco-Lite double gusset plate and expansion bushing construction.



Ladder sections operate automatically!

Channel slides the entire length of the ladder keep sections from becoming disengaged. Spring loaded locks automatically lock extended ladder sections. Ladder sections extend and lock and unlock simultaneously.

Aluminum Single, 2 Section, 3 Section and Roof Ladders are shown on the Aerial above.

The lightness in weight and trim, modern construction of Alco-Lite Aluminum Fire Ladders make them easier to handle and easier to lift. More important, these easier handling ladders save precious minutes and require less physical effort when used at fires.

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Remember — there is only one INDIAN FIRE PUMP! Insist on INDIANS — they have no equal.

No. 90 INDIAN

(Sliding Pump Type)

Form fitting, ventilated tank permits constant circulation of air between tank and carrier's back. No dampness. Leaves arms free for climbing ladders, etc. Highly popular for many years.

Both Types Approved by Underwriters' Laboratories.

Fire fighting authorities who have experimented with a "WET WATER" powder mixed with the water in an **INDIAN FIRE PUMP** tank report it does an excellent job.

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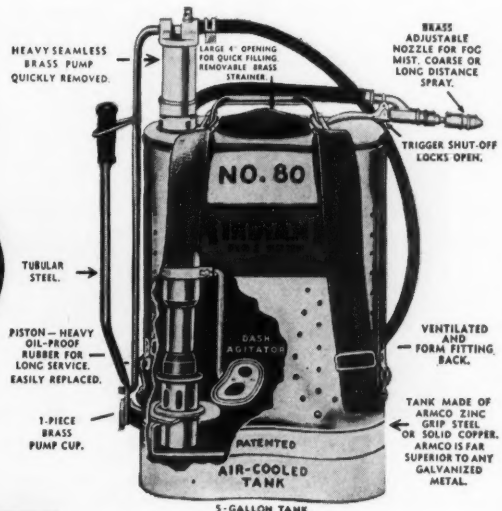
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LARGE 4" OPENING FOR QUICK FILLING. REMOVABLE BRASS STRAINER.
BRASS ADJUSTABLE NOZZLE FOR FOG MIST, COARSE OR LONG DISTANCE SPRAY.
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TUBULAR STEEL.
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1-PIECE BRASS PUMP CUP.
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AIR-COOLED TANK
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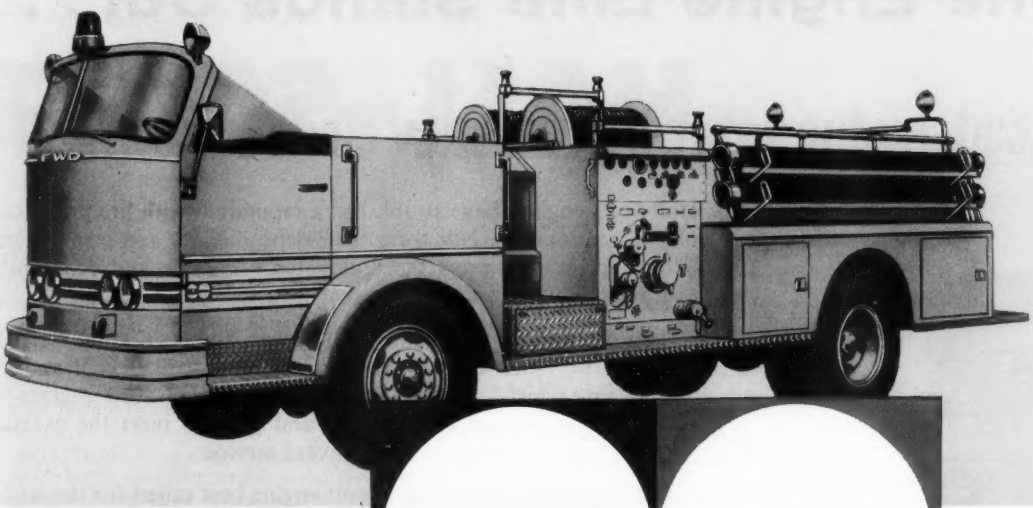

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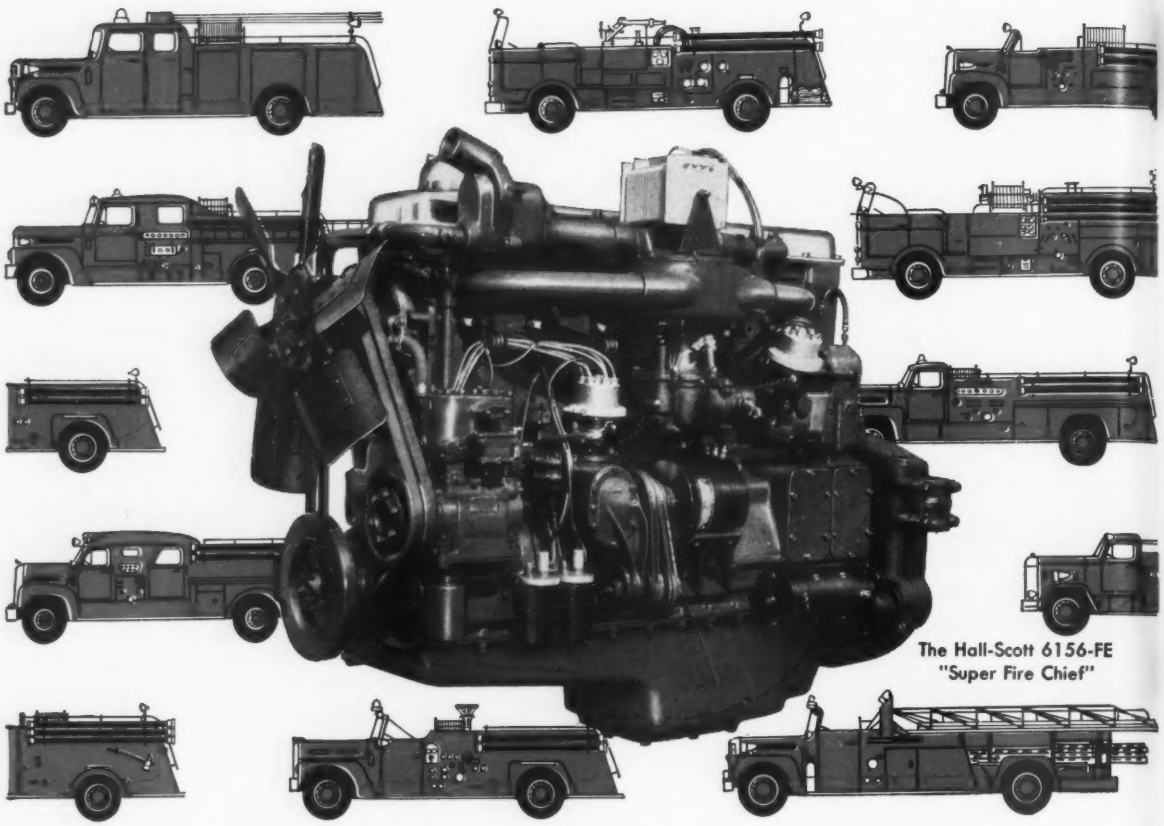

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For Fire Apparatus, One Engine Line Stands Out . . .

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Get full details on the Hall-Scott engine best suited for the equipment you plan to buy—or repower. These fine engines are available in all principal makes of fire trucks.

HALL-SCOTT ENGINES are now being serviced and produced by Hercules Motors Corp. For repair parts, or consultation on new engines for your equipment, call on the Hercules Distributor near you.

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ROCKWOOD Automatic Controls permit delivery of FOAM or water from any or all of six 2½" FogFOAM Nozzles and Direct Manual Turret at any desired rates. System includes 500-gal. "starter" water tank.

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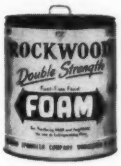

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Please send me details on Balanced Pressure Proportioning System and Double-Strength FOAM liquid.

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A Tragedy In Chicago...

was told in grim detail recently in newspaper headlines across America. 90 children and three adults lost their lives in a Chicago school fire. The news stunned the nation.

We at Gamewell are deeply concerned. Our sole business for over 100 years has been automatic fire detection and alarm systems. We know that science has provided equipment to prevent such tragedy.

Tragedy is a teacher. But often, after the headlines have faded, tragedy's greatest ally — *a man's own short memory* — lulls communities into complacency. Chicago's disaster gives mute testimony of the great danger of fire — and that hazards of fire are everyone's business.

If you are concerned with the safety of your children in your community's schools, have your Fire Chief, or School Board Official contact a Gamewell engineer. He is a highly trained expert in fire detection who can give you information, examples of fire alarm installations, and he will survey your buildings.

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VOL. 112, NO. 3

FIRE ENGINEERING

THE JOURNAL OF THE FIRE PROTECTION PROFESSION SINCE 1877

MARCH, 1959

Fire Safety and the Three "E's"

During the winter of 1958-59, the nation's press recorded daily instances of deaths due to fire. Notable among these were a number of families wiped out pratically in entirety while in their homes. In the wake of previous fire tragedies in which large numbers of men, women and children have lost their lives have come many laws, codes and ordinances. All of these legal restraints generally have been well meant and intended to prevent future occurrences of similar nature. Unfortunately, these holocausts seem to recur with some regularity in spite of safeguards previously legislated.

Immediately following any particularly tragic fire, a great hue and cry arises concerning poor inspections and inadequate regulations. At once new laws, new codes and more strict regulations are proposed with pious statements to the effect that similar catastrophes must never be allowed to happen. Yet it can be expected with reasonable certainty that many such fires will occur again and again.

The previous statement is not intended as a cynical observation but rather a logical conclusion. Most state and city statute books are presently overcrowded with legislation previously passed to accomplish similar objectives. Yet tragic fires continue to snuff out lives in spite of them! Obviously a serious weakness must exist in present-day thinking pertaining to fire safety; bitter experience has proven that laws alone are not sufficient.

Several years ago an agency of an eastern state preparing fire prevention training for firemen made a searching analysis of the subject. The conclusions of this study boiled down to exactly three words: Engineering, Education and Enforcement! This answer may seem an oversimplification at first glance, but a closer look will show that these words contain the basis of a sound fire safety program if adopted and supported in three equal parts.

Thinking back over the past months in an attempt to ascertain the reasons for the great loss of life in the reported catastrophes, it will be noted immediately that in each case one or more of the areas designated by these simple words was woefully inadequate or entirely lacking. The conclusion then becomes difficult to deny—if true fire safety is to be achieved, all three parts must be present and promoted with equal vigor.

Engineering requirements for new and old construction and occupancies are contained in present existing and nationally recognized fire prevention codes and building standards. Education must be accomplished by directing efforts at reaching all people in a community, not just selected groups who evidence some interest. Enforcement, while essentially a police action and as such unpalatable to many, can be accomplished more easily if based firmly upon the first two parts. Like bitter medicine, it will be taken by a patient when the need is clearly established.

These suggestions do not infer that new laws must be passed, new programs initiated and new personnel hired. Rather they imply that the fire service must give increased attention to existing programs and insure that all three parts are present. In many areas of this country fire departments have been conducting fire prevention campaigns which include to a greater or lesser degree the essentials previously identified. In many instances, gratifying results have been achieved.

It is not the intention to belittle here any efforts being put forth to prevent past tragedies from being reenacted. Rather, many fire departments and communities are to be commended for acting so promptly to correct existing weaknesses and wrongs when they are discovered. Without the crash inspection and enforcement campaigns to dramatize the need for action, perhaps little would be done to promote fire safety in the future. At the same time the need for continuing effort long after the public sense of urgency should be kept in view.

It has been the experience of the fire service that success is best achieved by well-conceived and continuing fire prevention campaigns rather than by one-shot programs which may seem to the average citizen publicity promotion stunts rather than serious effort. A stampede to do something on the spur of the moment seldom results in victory. More likely it forecasts future embarrassment and tragic defeat!

Glenn O'Brien

Brush Fires Sear Southern California

Phenomenal winds aggravate dry conditions and put mutual aid to severe test at close of 1958

By CLIFF DEKTAR

FIRE FIGHTING agencies throughout Southern California worked together in some of the finest examples of cooperation in the history of the state's fire service as major brush fires in tinder-dry canyon areas threatened to burn out of control as the year 1958 drew to its close. It was the climax to one of the driest seasons in the area—Los Angeles registered only .57 inch of rain from July 1, 1958 through New Year's. Added to the dryness was a heavy dose of the "Santana" or Devil Winds* blowing at speeds from 25 to 60 miles per hour, a probable arsonist loose in the Santa Monica Mountains, and just plain carelessness.

More than 100,000 acres of valuable watershed land were destroyed, one forest ranger killed, eight Los Angeles County firemen hospitalized with burns, more than 100 structures destroyed and a chief's car and three pieces of fire apparatus damaged or destroyed, in the fires which raged after November 28. At the height of the New Year's Eve fires in the Los Angeles area, men and equipment from nearly 50 different fire departments were in action.

Warner Ranch fire

The first of the series of major fires included in this narrative broke out at 2:21 p.m., November 28, on the Warner Brothers Movie Ranch near Calabasas in the Santa Monica Mountains at the western end of the San Fernando Valley. Six Los Angeles County engines, seven patrols, one tractor and two camp crews responded to the initial alarm.

Pushed by the high winds, the fire moved rapidly and it was feared the blaze might run to the populated area at the ocean near Malibu. Sixty-one engine companies from L. A. County, the California Division of Forestry and the U. S. Forest Service brought the fire under control after it had burned 4,040 acres, with no major structural damage.

However, L. A. County's problems were just beginning. At 10:35 a.m., December 2, a phone alarm from the 20th Century-Fox Movie Ranch House reported a fire near Las Virgines Road and Trycross, just west and slightly north of the previous Warners Ranch blaze. Because high winds increased the hazard, Engines 67, 65, 265, 70, 71, 72, 75, two camp crews, six patrols and a tractor, plus Battalion 5, Chief Frank Zalaha, and Division III, Assistant Chief Harvey Anderson, responded on the first alarm.

At 10:48, a radio report to Battalion 5 headquarters reported "fire at two acres—may get away." Seven minutes later Chief Anderson asked for a helicopter and five more rigs. Engines 82, 382, 66, 50, 7, plus five patrols responded. There had been several smaller fires in the vicinity which were quickly controlled by city and county units, but officials believed that an arsonist was operating in the general area of the west San Fernando Valley.

Liberty Canyon fire

At 11:24 a.m., on December 2, a second fire started at Ventura Boulevard and Liberty Canyon in Agoura to the north and east of the Fox Ranch blaze. Engines 245, 209, 17, 25, six L. A. City and three Ventura County pumpers responded. At 11:24 the initial water drop by U. S. Forest Service tanker planes was made on the first fire and by 12:28 p.m., County First Assistant Chief Roland Percey radioed a request for "21 engines and five tractors." Ten came from L. A. City, four U. S. F. S. and six from Ventura County. Aerial bombers using borate were successful in some areas inaccessible to ground units.

A field report at 12:32 indicated the two fires would burn together near Malibu Lake which they subsequently did. At 12:37, lines connecting the County's Castro Peak transmitter and the Battalion 5 dispatching and control center were burned out, hampering radio communication. Also destroyed were miles of County fire telephone lines (it cost $20,000 to repair these facilities). Relay stations were set up to aid transmission of messages.

The fire was now racing west toward the old Malibu burn of 1956 into parts of Latigo and Corral Canyons, eventually crossing the Pacific Coast Highway and threatening homes along Old Malibu Road in Malibu. Massing of apparatus in this area saved the homes, but the four-lane divided highway was impassable at times because of wind-swept flames billowing across the road. Residents were evacuated from the area and military personnel from the Army and Marine Corps moved in along with forestry crews and equipment.

Apparatus destroyed

At 4:27 p.m., Battalion Chief Parsons reported that County Engines 13 and 58 had been swept by fire in upper Corral Canyon and there were eight injuries.

The two engines and their crews were enveloped by fire from all sides. Several of the men were badly burned from the flames, while others received steam burns. They had wet themselves down and were under their rig when the steam apparently penetrated their turnouts. Engine 13 was completely destroyed and damage to Engine 58, a late-model triple combination, was reported at $15,000.

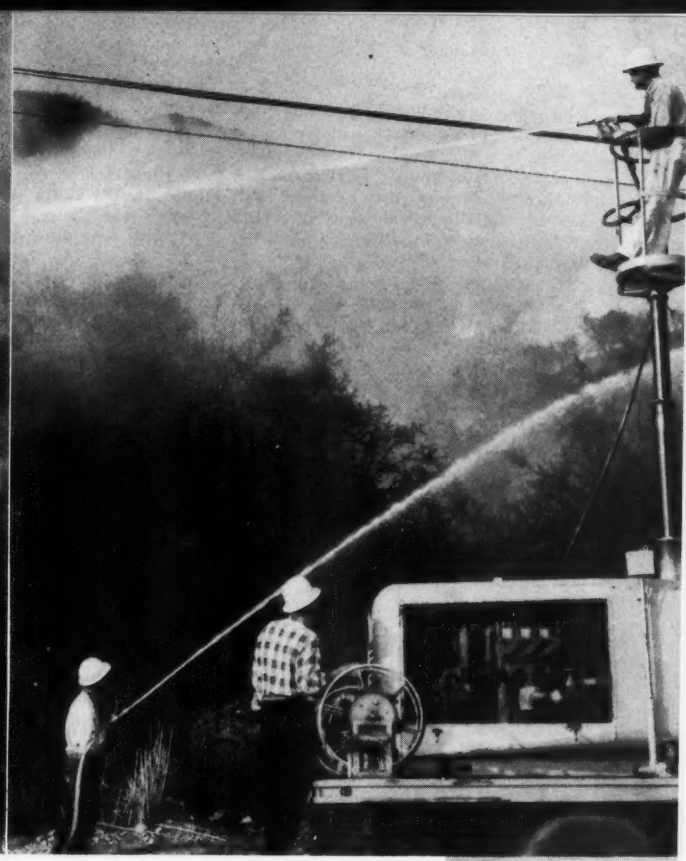
Two County helicopters were ordered to the scene. The two most seriously burned firemen were flown directly to a heliport atop Santa Monica Hospital. Two other seriously burned men were flown to Malibu Emergency Hospital and the remaining four were taken out by ambulance. It was another demonstration of the successful use of helicopters to remove injured personnel from semi-remote areas with speed to insure maximum treatment. All the men will recover.

During the battle, the wind stirred up the Warner fire and equipment had to be diverted there. Ventura County also had a fire near Santa Susana and six Ventura engines had to be sent back. Nine cities including Santa Monica, Culver City, Montebello, Monterey Park, Monrovia, Pasadena, Azusa, Compton, and Vernon moved their equipment into empty County stations. At each station a County fireman was left behind to work with the mutual aid unit.

Noteworthy on this fire was the use of three military S58 helicopters from the Coast Guard, Navy and Marine Corps, to ferry personnel. The aircraft ferried men in from a heliport near the Paramount Ranch fire camp in a few minutes. It was estimated that they would have had to walk two and a half hours in and out.

Southern California Edison Co. sent in six insulator washing trucks to protect

* The Santana wind, sometimes called "Santa Ana," is peculiar to Southern California areas. It is caused by the build-up of an intense high pressure area over California's interior deserts. When the barometer falls over the ocean, the winds rush through mountain passes in swirling gusts which can reach or exceed 100 mph.



Above left: L. A. County captain hauls line into position to meet flames advancing down hill towards road during Liberty Fire—*L. A. County F. D. photo*

Above right: Southern California Edison Co. employees use high pressure lines and hydraulic platform to safeguard poles and electric lines during Liberty Fire
—*Southern California Edison photo*

Below: U. S. Forestry Service and L. A. County fire crews stop Liberty Fire from crossing Malibu Canyon Road —*L. A. County F. D. photo*

their poles and one of the rigs was credited with helping to save a house in the Malibu sector. Edison has been using this type of equipment since 1956 on various brush fires. The rigs carry up to 750 gallons of water and can deliver a high pressure stream up to 800 psi from a hydraulically elevated platform.

The Liberty fire was controlled Saturday, December 6, with 42 structures destroyed and 17,860 acres in a perimeter of 20 miles burned over. Thirty-six L. A. County engines, eight L. A. City, 10 California Division of Forestry, eight Ventura County, seven OCD, five U. S. F. S., one high pressure unit from Port Hueneme Naval Fire Department, 1,878 men and auxiliary units, including 23 patrols, 18 bulldozers, two PBY tanker planes and three TBM tankers were employed.

land Forest Supervisor, and California Division of Forestry units were under Deputy State Forester James Mace.

Eight helicopters, including four from the Marine Corps Air Facility in Santa Ana, were used to ferry personnel. Twelve aircraft were used from the U. S. F. S. and the C. D. F. Seven fire camps were set up. A California Disaster Office communications truck was located at Cariso Guard Station.

Worst still to come

At 9:30 a.m., Wednesday, December 31, Captain Ralph Smith of County Engine 68 along with Patrol 68 and 69, was at the Topanga Canyon summit looking north toward the San Fernando Valley. "We had so many mysterious fires starting," said Smith, "that we thought it might be a good idea to get up high where we could see things. We spotted this fire near Canoga Avenue and Mulholland, east of Topanga in the City and radioed the alarm as we responded ourselves. By the time we got there, the fire swept by us into the canyon."

With swift winds blowing, Engines 69, 65, 265 and 75 joined the other units, plus Patrol 269, two bulldozers and four camp crews. L. A. City received an alarm at 4241 Canoga Avenue at 9:40 and rolled Engines 84 and 72, Tractor 1 and Mountain Patrol Tank 2. At 9:50 County Assistant Chief Harvey Anderson requested five more companies and five minutes later, five additional. Responding were County Engines 7, 209, 25, 22, 245, 73, 373, 382, 81, plus five patrols.

Racing into Topanga, the flames menaced homes in several residential areas and an army of sheriff's deputies and California Highway patrolmen started ordering residents out of their homes. Several thousand eventually were evacuated. The fire rushed on toward the Fernwood Pacifico tract, burned into Tuna Canyon, Big Rock Canyon, eventually hitting and crossing the Pacific Coast Highway south of Malibu proper.

Extensive mutual aid

Again the County's major fire plan went into effect, with Chief Keith Klinger taking field command and Deputy Chief John Duncan taking charge of headquarters. From 100 miles away, mutual aid units began moving in.

Five Kern County Fire Department units under personal command of Chief Elmo Freear arrived and from Ventura County, Chief Bill Haggard led five companies, plus two Ventura OCD units to cover empty County stations Additional equipment came from L. A. City (the fire actually started in the city and was burning in city-county initial action zone), Santa Barbara City, Santa Barbara County, Montecito Fire District, Santa Monica and Glendale In addition, there were 15 OCD rigs and units from Point Mugue and Port Hueneme Naval Bases, Oxnard Air Force Base, the U. S. Forest Service and the California Division of Forestry.

As in the Liberty fire, engine companies from cooperating municipal fire departments moved into County stations to cover. Sixteen first-line County reserve companies were activated and manned by a limited recall of manpower and equipment in the shops was rushed out.

In total, there were 118 engine companies, 35 of them the County's; 1,722 men; 18 bulldozers; three helicopters; 16

Left: Los Angeles firemen and civilian volunteers protect residence as flames threaten Beverly Glen area
—L. A. City F. D. photo

Right: Engine 58 suffered extensive damage in the Corral Canyon Fire. Crew members who took refuge under pumper were hospitalized with flame and steam burns
—L. A. County F. D. photo

Below: Tires and hose of apparatus burn during night of December 2 at Liberty Fire—*L. A. County F. D. photo*

Elsinor fire

There were a number of minor fires throughout Southern California after the Liberty fire, but one of the West's largest fires in area of any year broke out in the Cleveland National Forest west of Elsinor on Sunday, December 14, at approximately 1:45 p.m.

It eventually blackened 66,300 acres in the counties of Orange, Riverside and San Diego.

The 100-square-mile blaze destroyed 19 buildings and killed one fire fighter, Joe Adams, a ranger from Prescott National Forest in Arizona.

The fire was reported under control at 8:00 p.m., December 20. It was started by Jerry Stewart on his father's ranch seven miles southwest of Lake Elsinore, when he fired a tracer bullet into dried grass while target shooting.

Total manpower was 2,768, with 76 pumpers and 51 bulldozers. Cleveland National Forest units were under the command of Stanley Stevenson, Cleve-

patrols; four food dispensers; four TBM and two PBY tanker planes; one four-engined PB4Y "Privateer" tanker; one "bird dog" plane; one chemical unit; two mother tankers and two gas dispensers.

The fire was controlled late Friday, January 1, with 59 structures totally destroyed, six partially burned, with 4,980 acres burned and an estimated $1,250,000 in watershed damage. County Engine 69 had its cab burned off, while the Battalion 11 sedan was destroyed.

An ironic twist was that Engineer Fred Howse of County Engine 7 was fighting the fire in the area, while his own home in Tuna Canyon was totally destroyed. His family escaped without injury.

San Diego gets a scare

A four-alarm canyon blaze on December 30 within the City of San Diego narrowly missed being a conflagration. The fire broke out in San Clemente Canyon in North Clairmont and threatened hundreds of new, costly homes along the 12-mile fringe of canyons.

Fast work by 100 San Diego fire fighters, aided by volunteers and neighborhood householders who manned garden hoses and helped firemen advance lines, prevented a disaster. The fire damaged the interior of one garage, destroyed a 19-foot cabin cruiser and some patio furniture. Many structures were blistered by the flames which roared up canyon walls.

The blaze, which burned over a 25-city-block area, was caused by a 12-year-old boy who lit a packet of matches. At 11:50 a.m., fire headquarters received a still alarm for Constitution and Jamestown Streets, and Engine 27 was dispatched. A box alarm was received almost simultaneously. A second alarm was struck at 11:56 a.m., a third at 12:12 p.m., and the fourth at 12:39 p.m. Twelve engine companies and one ladder company under Chief George Courser fought the fire, aided by tankers and utility rigs from other city departments. Off-shift firemen responded on call to man reserve units and aid in fighting the fire. Extensive relocating of other company units was necessitated to protect far-flung exposed areas.

The fire was under control by 1:30 p.m., but watch lines were maintained most of the night. No one was seriously injured.

It is interesting to note that this was the second four-alarm fire in the city's history. The first, for a 12-acre canyon fire, was on September 14, 1956. The city's sole five-alarm blaze was also for a canyon blaze on September 27, 1957, in which two homes were burned and nine damaged.

L. A. City punished

The Beverly Glen-Benedict Canyon fire was the greatest fire emergency in the history of Los Angeles and brought forth the biggest concentration of fire equipment ever recorded by the L. A. Fire Department. This blaze started in heavily populated and wooded Beverly Glen Canyon at 10362 Tupelo Lane at 3:42 p.m. on December 31. L. A. City had approximately 22 units deployed at the Topanga fire at the time. At 3:48 p.m., Engines 42 and 58 and Battalion 9 were dispatched, followed three minutes later by two 400-gallon booster tanks, 78 and 37. Within the next hour five more engines were dispatched at various intervals. Investigation later discovered a seven-year-old boy playing with matches as the cause.

The story of what occurred in the field is best told by Don Hibbard, administrative deputy chief and acting chief engineer. "I was returning from the Topanga fire when I heard the alarm. When I arrived the fire was burning slowly up the east side of the canyon toward a fire road. I called for a helicopter to size up the fire. I could see that if we could obtain aerial tankers for immediate water bombing, we could stop the advance easily. Not having a fire radio in the helicopter, we landed and I radioed for the tankers. It took approximately 30 minutes for the tankers, which were operating at Topanga, to get in. Unfortunately, about 20 minutes later, the wind swept up and the fire started over the road toward Benedict Canyon."

To further complicate matters, at approximately 4:30 p.m., the L. A. Fire Department was operating on three major fires—Topanga, Beverly Glen and a second alarm at 810 Santa Fe Avenue in the industrial district. Some 48 units were committed at this time.

Chief Hibbard flew over the fire again at nightfall and saw it spreading on a quarter to half-mile front. At 5:30 p.m. he declared the fire a major emergency and additional equipment started moving in to back up the numerous rigs already on the line. Acting Deputy Chief Art Fowler was contacted at the Topanga fire and immediately responded with six rigs which had just completed their assignment there.

Heavy commitment

At the height of the Topanga fire, the Los Angeles Fire Department had 20 empty firehouses and at the peak of the Beverly Glen-Benedict blaze, the number jumped to 43—nearly half the total stations.

Eleven of these stations were filled between 7:42 and 11 p.m. by mutual aid companies from Huntington Park, Pasadena, Burbank (two), Long Beach (two), Alhambra, South Gate, Downey, Whittier and Lynwood—this in addition to the units previously noted filling empty County stations. A Los Angeles fireman was left in each house as guide.

As the night wore on, it became obvious that additional outside assistance was needed. Six OCD units were obtained from the Topanga fire and 11 L. A. City two-piece companies were split, one rig being sent to the fire and the other manned by salvage and truck personnel remaining in the station. Through L. A. City and County Civil Defense, Harold Bowhay, chief of California's Disaster Office fire service, obtained equipment from Santa Barbara City, Montecito, Carpenteria and Orange and Ventura County. Some of the Santa Barbara and Montecito apparatus had just returned from duty at Topanga.

In the field, Chief Engineer William Miller returned from vacation to take charge. Shifting winds had blown the fire easterly across Benedict and in a swirl westerly back across Beverly Glen, where one expensive home was lost.

The County was asked for 10 companies. Somehow Chief Duncan managed to break loose five fresh County companies despite the heavy commitment at Topanga. He remembered an earlier offer of assistance from Chief Jay Benner of

Continued on page 229

Volunteer firemen construct fire line in attempt to head off blaze on Hawks Mountain in eastern Vermont—*Photo by John Titchen*

Fighting Natural Cover Fires

A review of the techniques and factors to be considered when combating grass, brush and forest fires

NATURAL COVER fire fighting, the extinguishment of grass, brush, weeds, lots, forest, trash and dump fires, represents about 25 per cent of the alarms and 50 per cent of the fire fighting duties of many fire departments. Yet the budgeting of expenditures and the specific training in extinguishment techniques for this type of fire fighting are seldom given their proper places in a department's planning.

Many fire chiefs also seem to forget that a large portion of the assessment rolls upon which their financing is based is composed of land values. I have heard a chief, over a fire radio, refuse to respond to a brush fire "because it was woods burning; call the state conservation department." The chairman of the board of fire commissioners echoed this view. It was necessary to obtain a copy of the assessment roll in question to prove to these officers that it was just as much their duty to extinguish outdoor fires as those in structures.

Outdoor, non-structural fire fighting is composed of two types: Fires which involve autos, trucks, trains, air and water craft; and those which involve natural cover.

There are two principal methods of extinguishing natural cover fires, both evolving from the familiar fire triangle, but from different sides. The wet, or conventional water method, used by most fire departments extinguishes the fire by cooling. The dry, or "waterless" method, used by most conservation agencies extinguishes the fire by removing the fuel. The command decision of which to employ must be made early in the size-up by the officer in charge.

Factors affecting the decision are those of fire size, available help, type and distance of exposures, rate of spread, estimated time of control, weather, fuel, slope and terrain.

The governing factors for wet fire fighting are: The length of hose lines to be used as compared to the distance and time required to reach the most remote part of the fire; the amount of water available; and the possibility of resupply of water via tank trucks, hydrants or natural sources in the fire area. The use of brushbreaker type forestry trucks should be considered as a special-hazard type of protection, being designed for particular soil and fuel types.

The knapsack tank is a useful item of equipment in wet fire fighting. It is most valuable where fire intensity is low, water resupply is near and plentiful (such as a mountain stream), and the fire fighters have been trained in the proper use of the pump and tank. The tanks are particularly useful in mop-up and patrol phases when used with a wetting agent additive.

When water is not available in sufficient quantity to effect complete extinguishment, either beyond reach of hose lines, or beyond the capacity of municipal water supply, tanker relays, or natural sources, the dry line method will be quicker.

Dry-line extinguishment is more efficient when fires occur in rough terrain, soft ground, and far from roads, where the brush is light and may easily be removed. The leaves of hardwood trees

By TIMOTHY G. STILLMAN

The author is an active volunteer fireman and has served as both company officer and chief of the Cornwall-on-the-Hudson, N. Y., Fire Department. He is a former field representative of the Bureau of Fire, New York State Division of Safety, and has been active in training fire fighters to meet grass and brush fire problems.

Volunteer fire fighters race into action near Claremont, N. H. It required four hours of hard work atop Bible Hill to control blaze. Fire started when high winds whipped embers from cooking fire under maple syrup kettle into grasslands

may be cited as an example of this type of brush.

Size-up determines use

The first phase of waterless fire fighting is, as in all fires, the size-up. The first arriving officer must decide whether or not to use it. Once the decision is made, the job of controlling and extinguishing the fire may commence.

The first factor of consideration is economic: That of extinguishing the maximum amount of fire with the minimum amount of effort. The United States Forest Service has reduced this to a dollar-and-cents ratio of fire losses to fire suppression costs through loss statistics on natural cover fires. A decision to hold a fire along a natural barrier, while permitting a larger area to burn, may result in a more rapid job of fire extinguishment and a resulting lower cost.

Fundamentally, the waterless method of natural cover fire fighting is an adaptation of the "one lick" forest fire line construction which is used by agencies controlling major fires in heavy timber. Manpower is organized into crews who proceed to surround the fire with an incombustible barrier (the line, or fire line).

There are two ways to do this: The patrol method, where each man has his assigned section, and the "one lick" or continuous production method, where each man performs a simple task rapidly while in motion along the perimeter of the fire. A number of men performing the same task is called a "group." Several groups performing different tasks are called a "crew." The entire organization moves somewhat like a centipede around the fire.

A fire company (five men and an officer) can be organized as follows:

The Officer — Determines location and route of fire line; removes fallen branches

Clearing Group—Consists of an axe man who chops dead falls clear to width of line, and a rake man who rakes litter and brush clear of line

Digging Group—Consists of a hoe man who chops duff away to mineral soil, and a shovel man to clean out line

Patrolman—Works to rear along line to be sure that fire does not burn across; backfires if necessary

This organization, working initially about 30 to 50 feet away from the edge of the fire, can control about 25 feet of fire line a minute. By expanding the size of the crew with manpower from mutual aid response it is possible to reach rates as high as one mile per hour in suitable terrain and fuels.

A dry-line fire fighting team is organized as a crew of men, divided and equipped to perform particular tasks by groups while in forward motion around the perimeter of the fire. The jobs of the task groups are:

1. To locate the line to take maximum advantage of terrain, together with sufficient distance from the fire to permit the full line to be built in a relatively cool smoke-free area
2. Clearing low brush and fallen timber from the line and adjacent areas
3. Digging out roots and duff to mineral soil
4. Improving line to form incombustible barrier by covering duff with mineral soil on both sides of the excavated line
5. Burning out, from the dry line towards the fire, the small remaining strip of unburned fuel
6. Patrolling to the rear to be sure that the line will contain the fire, including mop-up of remaining hot spots and snags.

Equipment used for dry-line fire fighting is not unusual or expensive. The exact tool load of each group and crew should remain flexible, as different areas of the same fire may require slightly different action. The important factor in dry-line work is to keep the tasks evenly distributed so that the entire crew can move forward at a steady rate.

Common tools and their uses include:

Machete—Mark line; clear light (up to 2-inch diameter) brush

Single and double-bit axe—Clear brush; cut downed timber; cut burning snags and stumps

Brush hook—Clear brush

Pulaski Tool—As axe, clear brush; as hoe, grub out ground; cut roots, cut burning area out of stumps and snags

Council Rake (also has other names)—Mows light brush; used as grub hoe

Scythe—Mows brush

Fan Rake — Removes hardwood leaves and light duff

Broom — Removes leaves, pine needles and dry grass

Continued on page 231

Brush breaker recently placed in service by Edgartown, Mass., serves as combined structural-forest pumper. It is designed to serve Martha's Vineyard resort area where sandy soil and forested terrain are complicated by heavy snowfall—*Waterous Company photo*

"FOR A BETTER-READ, BETTER-INFORMED AMERICA"

National Library Week
April 12-18, 1959

Vital Adjunct Of the Modern Department . . . .

The Fire Library

New York Fire Department Library is located at the Fire College, Long Island City. Typical surroundings are conducive to serious reading and study in contrast to sometimes hectic pace and distractions of the average fire station—*FDNY photo*

By CLARENCE E. MEEK

Honorary Battalion Chief and Librarian
New York Fire Department Library

ENGINEERING has been defined as the "art or science of utilizing or controlling natural forces and materials, or managing by ingenuity or tact." The claim of the fire service for professional recognition has been made valid by the work done by many students of fire fighting and fire protection technicians who have raised our standards to the level stated in this definition. The technical writings of the men of the fire service have, in the past half-century, given us a literature worthy of a recognized profession.

The nuclear and jet age, with its speed-of-light technical advance, has brought with it such terrifying new hazards that the fire service is given a tremendous challenge of continuous research, study and writing.

The fire officer and fire protection engineer are concerned with so many phases of science and job techniques that a fire library serving a municipality and granting reference and study privileges to citizens interested in fire control—as does the library of the New York Fire Department—should have on its shelves a comprehensive selection of technical works, academic textbooks, fire protection handbooks and manuals, historical records and current publications of the fire service and associated fields.

The book racks should include building codes, fire prevention laws, directives of the various municipal and governmental departments concerned with fire control and defense, handbooks of engineering, fire fighting operations, hydraulics, water supplies, first aid, refrigeration, air conditioning, chemistry, electricity and physics, works on radio and electronics, books on arson, regulations governing dangerous materials and a collection of training manuals of the fire departments of the country.

In the field of administration there could well be books on organization and management, budgeting and procurement, personnel and public relations, maintenance manuals of all kinds, works on writing and report preparation.

A most important part of the fire library is the historical section. The traditions and history of the fire service generally, and of the individual department, are great creators of the pride and esprit de corps that help build the morale of fire fighters. A well-stocked and arranged collection of firemania—if you will pardon the expression—may inspire many men to dig into the sections on instructional material.

Our conception of what constitutes a fire library has grown far beyond the textbooks of the elementary school and drill yard. We have found that the librarian has seemingly endless sources for supplying basic scientific and engineering source material needed by the student and instructor. What is left for members of the fire engineering profession to supply is study, research and writing on the new hazards created, and the control techniques required because of them. This age of technology will give the best minds of the fire protection profession plenty to do in the fields of research and writing.

Indexing important

The librarian's greatest and most important task is the complete and proper indexing of all material as soon as it is received. The finest library is not worth much if you do not know what is in it and can locate what you want within a few minutes. In the New York Fire Department Library there are about 24,000 index cards with approximately 150,000 to 200,000 entries, completely cross-indexing the subject of all books, manuals, bulletins, orders and directives, not forgetting items and articles in current publications which may be referred to later.

A tragedy of the radio-television age seems to be a decline in reading habits of a considerable portion of the population. While we have contact with the young men of the department during the time they are at the fire college attending indoctrination classes, we try to interest them in regular reading of current publications of their vocation. The placing of fire service and other selected journals on the library tables is a lure which may encourage the ambitious men to follow through and personally subscribe to the journals, or visit the library regularly, so that they may keep abreast of the technical developments of their job.

The librarian's greatest satisfaction will come from the contribution he may make toward the professional advancement of the fire fighters who take advantage of the study material he has placed on the book shelves and library tables for their continued use. □□

SNAP OUT FOR FILING

SNAP OUT FOR FILING

PORTABLE PUMPS FOR FIRE FIGHTING

GORMAN
—RUPP

portable
pumps
FOR FIRE FIGHTING

GORMAN-RUPP PUMPS

GET WATER ON THE

Outstanding Features of Gorman-Rupp Dual Fire-Fighter Pumps

These Gorman-Rupp Dual Fire-Fighter Pumps have a proud record for valuable and dependable service with industrial and municipal Fire Departments across the nation: (1) as booster pumps, (2) for direct pumping from water source to fire when pumpers can't reach the fire.

Easy, two-man carry, with handles that swing out of the way when not in use, these pumps start throwing water in less than 30 seconds. They can abundantly supply water to truck pumpers to operate two ½-inch nozzles at 100 pounds pressure.

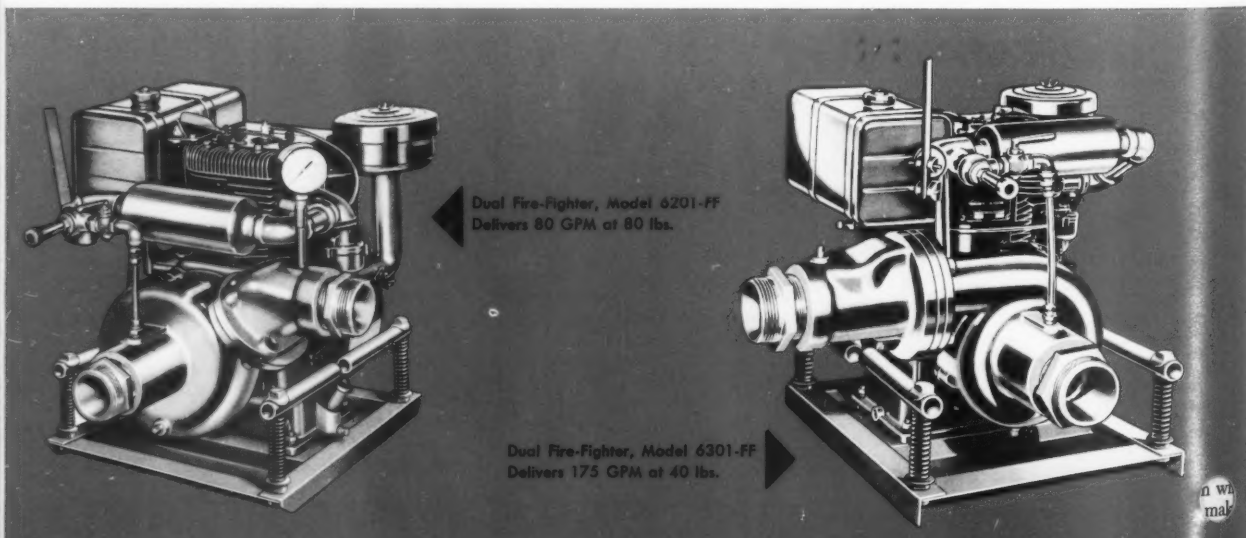
Gorman-Rupp Dual Fire-Fighter Pumps are equipped with self-lubricated mechanical shaft seals which require no grease, the liquid being pumped does the lubricating. Other quality features include: exhaust priming—the pumps prime in 15 to 30 seconds depending on suction lift. Suction and discharge fittings, in National Standard Fire Hose Threads, as standard equipment (other threads, and 1½" Siamese discharge connection with individual controls are available on order.)

SELECTION TABLE

MODELS 6201 & 6301
at 3200 r.p.m.

TOTAL HEAD											SYMBOL		MODEL		SIZE	
Ft.	Lbs.										1		6201		2½	
162	70	1	1	1	1	1					2		6301		3	
139	60	1	1	1	1	1	1									
116	50	1	1	1	1	1	1									
92	40	1	1	1	1	1	1	1	2	2						
69	30	1	1	1	1	1	1	1	1	1	2	2	2			
46	20	1	1	1	1	1	1	1	1	1	2	2	2	2	2	
23	10	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2
		20	40	60	80	100	120	140	160	180	200	225	250	275	300	325

U. S. GALLONS PER MINUTE



Dual Fire-Fighter, Model 6201-FF
Delivers 80 GPM at 80 lbs.

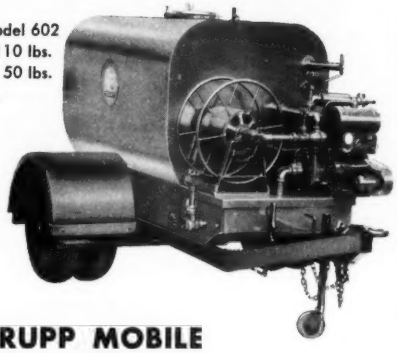
Dual Fire-Fighter, Model 6301-FF
Delivers 175 GPM at 40 lbs.

For complete listing and selection table of Gorman-Rupp Fire-Fighting Pumps, see back cover.

FIRE QUICKLY!

OTHER PUMPS FOR FIRE FIGHTING →

Mobile Fire-Fighter, Model 602
Delivers 50 GPM at 110 lbs.
150 GPM at 50 lbs.
Net weight—2300 lbs.



GORMAN-RUPP MOBILE FIRE-FIGHTER, MODEL 602

Developed and built by Gorman-Rupp, this Fire-Fighting Trailer is ideal for summer resorts, farms, small villages. It has seen duty in putting out grass fires on turnpikes. Mounted on dual wheels, the trailer can be towed by pickup truck, tractor or jeep.

The trailer consists of a 600-gallon tank equipped with a Gorman-Rupp 2½" Dual Fire-Fighter Pump, engine driven with electric starter.

The unit pumps both from and into the tank . . . can be refilled from streams or ponds and may be used for fighting fires direct from water supply. For detailed specifications, ask for Specification Data Sheet, No. 7-FD-12.

Tank Wagon Unit, Model 201
Delivers 500 GPM at 35 lbs.
Net weight—2500 lbs.

GORMAN-RUPP FIRE-PROTECTION TANK WAGON UNITS

Get water to the fire fast with this Gorman-Rupp Fire-Protection Tank Wagon. Ideal for protection of isolated cottages, farms where water has to be brought in, areas where water or water pressure is low. Model 201 has a tank capacity of 1100 gallons. Tank is constructed of 12-gauge steel and the frame of 10-gauge steel. Also, a sanitary service unit.

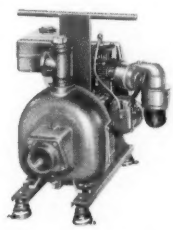
Unit is equipped with 4" Gorman-Rupp self-priming centrifugal pump powered by Wisconsin 21-hp, air-cooled gasoline engine.

Tank and pump mount on any standard truck chassis 158" to 161" wheel base.

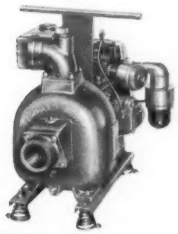
GORMAN-RUPP'S NEW "80" SERIES LIGHTWEIGHTS for any dewatering job . . . for fire fighting in emergencies

MIDGET—1½"—Model 81½A-6BFB

PELICAN—2"—Model 82D-8BFB



HAWK—2"—Model 82E—ACN



EAGLE—3"—Model 83A-8KN

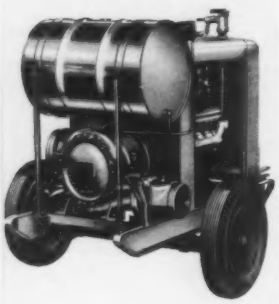
SELECTION TABLE—Lightweight Pumps—10-Foot Suction Lift—Continuous Duty

TOTAL	HEAD																				SYMBOL	MODEL
Pounds	Feet																					
56.3	130	3																			1	Midget 81½A
51.9	120	3	3	3																	2	Pelican 82D
47.6	110	3	3	3	3	3															3	Hawk 82E
43.3	100	3	3	3	3	3	3	3	4												4	Eagle 83A
38.9	90	3	3	3	3	3	3	3	3	4	4	4										
34.6	80	3	3	3	3	3	3	3	3	3	3	4	4	4								
30.3	70	3	3	3	3	3	3	3	3	3	3	4	4	4								
26	60	1	2	3	3	3	3	3	3	3	3	4	4	4	4							
21.6	50	1	1	2	2	3	3	3	3	3	3	3	4	4	4	4						
17.3	40	1	1	1	1	2	3	3	3	3	3	3	4	4	4	4	4					
13	30	1	1	1	1	1	2	2	3	3	3	3	3	3	4	4	4	4	4			
8.6	20	1	1	1	1	1	1	2	2	2	3	3	3	3	4	4	4	4	4			
4.3	10	1	1	1	1	1	1	2	2	2	2	3	3	3	4	4	4	4	4			
		50	60	70	80	90	100	110	120	130	140	160	180	200	220	240	260	280	300			
		U. S. GALLONS PER MINUTE																				

DIMENSIONS and WEIGHTS

Selection Chart No.	Model	Type	Size	DIMENSIONS (Base)			WEIGHT	
				Length	Width	Height	Net	Shpg.
1	81½A	6BFB	1½"	17"	16"	16"	50	60
2	82D	8BFB	2"	17"	15½'	15 7/16"	53	68
3	82E	ACN	2"	22"	19¾"	21"	128	145
3	82E	14FB	2"	22"	19¾"	21"	119	141
4	83A	BKN	3"	22"	19¾"	22"	131	153
4	83A	K160	3"	22"	17½"	22"	123	142

THESE GORMAN-RUPP SPECIAL-PURPOSE PUMPS CAN ALSO BE USED FOR FIRE FIGHTING



HIGH-PRESSURE CENTRIFUGALS

For continuous heavy-duty service. Ideal for jetting, gravel washing, fire protection, rotary drilling and road construction.

SPECIFICATIONS

HIGH-PRESSURE CENTRIFUGALS

SYMBOL	MODEL	TYPE	SIZE	DIMENSIONS			WEIGHT	
				L	W	H	NET	SHPG.
1	53M	TFD	3	24	25	29	350	400
2	53H	VF4D	3	43	38	36	620	666
3	54A	VG4D	4	45	40	38	785	850
4	54M	CJ3A	4	67	40	43	1100	1225
5	54B	IND30	4	70	33	50	1210	1435
6	55A	IND32	6	80	37	51	1740	1860
7	55A	IND56	6	72	44	53	1910	2000

SELECTION TABLE

HIGH-PRESSURE CENTRIFUGALS
FULL THROTTLE OPERATION

TOTAL HEAD																
Ft.	Lbs.															
416	180									7						
399	170									7						
370	160				5	5	5	5	5	7	7					
347	150				5	5	5	5	5	7	7					
323	140				5	5	5	5	5	5	7					
300	130				5	5	5	5	5	5	7	7	7			
277	120	2	2	3	3	3	4	5	5	5	5	7	7	7		
254	110	2	2	2	3	3	3	4	5	5	5	6	7	7	7	
231	100	2	2	2	3	3	3	3	4	5	5	6	7	7	7	7
208	90	1	2	2	2	3	3	3	3	4	5	6	6	7	7	7
184	80	1	1	2	2	2	3	3	3	3	5	6	6	7	7	7
162	70	1	1	1	2	2	3	3	3	3	4	5	6	6	7	7
139	60	1	1	1	2	2	2	3	3	3	4	5	6	6	7	7
116	50	1	1	1	1	2	2	2	3	3	4	5	6	6	7	7
92	40	1	1	1	1	1	2	2	3	3	4	5	6	6	7	7
69	30	1	1	1	1	1	2	2	3	3	4	5	6	6	7	7
		100	150	200	250	300	350	400	450	500	600	700	800	900	1000	1100	1200

U. S. GALLONS PER MINUTE

DIAPHRAGM PUMPS

Electric or gasoline driven. Mounted on wheels for portability. Ideal for bailing out basements after fires.

PERFORMANCE

MODELS 3D-8BR6 & 3D-E1½ at 60 strokes per minute

STATIC LIFT	STATIC HEAD IN FEET					
	0	5	10	15	20	25
5 ft.	70	67	65	62	60	57
10 ft.	65	63	61	59	57	55
15 ft.	60	58	57	56	54	52
20 ft.	55	55	54	53	52	50
25 ft.	50	50	50	49	49	48

Above performance with 2-inch suction hose and 3-inch noncollapsible discharge hose.

PERFORMANCE

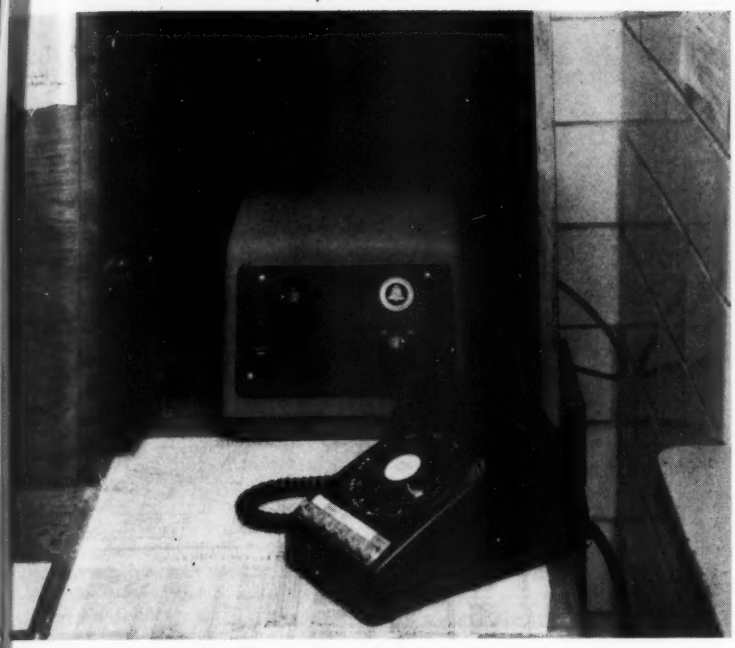
MODELS 4D-BKN, 4D-K160 & 4D-E3 at 52 strokes per minute

STATIC LIFT	STATIC DISCHARGE HEAD					
	0	5	10	15	20	25
5 ft.	148	123	110	108	106	104
10 ft.	113	106	104	103	101	100
15 ft.	98	94	90	86	81	76
20 ft.	82	78	76	72	68	65
25 ft.	65	75	90	85	55	52

Above performance with 3-inch suction hose and 4-inch noncollapsible discharge hose.

THE GORMAN-RUPP COMPANY 305 Bowman Street, Mansfield, Ohio

Manufacturers of Pumps—for Construction, Irrigation, Petroleum Service, Mining, Farming, Industry, Utility Service, Oil Field, Fire Fighting, Sanitary Service and Emergency Applications.



With new alerting system, firemen know type of fire immediately and are prepared for special problems. Repair and maintenance are the responsibilities of the Telephone Company

Garden City has a population of approximately 25,000. The part-paid and part-volunteer fire department maintains four engines and two aerial ladder trucks in service, together with various emergency and utility vehicles. Apparatus is housed in three stations. The minimum paid force on duty includes a driver-operator for each vehicle and one officer. Normal paid force at the headquarters station includes an additional officer and two or three additional firemen. Paid personnel are fully qualified fire fighters and are not restricted to driver-operator duties. While there is no public fire alarm box system, the village is well zoned with a three-digit location code assigned to each zone, which is relatively small.

New Phone System Simultaneously Alerts Garden City Volunteers

THE GARDEN CITY, N. Y., Fire Department on December 20, placed in service a new system for alerting volunteers to alarms. Unlike other alerting systems, this one does not require the installation of bells, receivers or other special equipment in the volunteer's home. In operation the system simultaneously rings, with a distinctive signal, the regular home phones of 70 volunteer fire fighters.

Equipment includes an alerting phone at the watch desk, with all dial finger holes plugged except the 5, 9 ond 0. Six push buttons, three of which are currently in use, are also provided on this phone. A transcribing unit with pilot light is connected to the phone, and a direct, reserved line connects the phone and transcriber to the telephone central office, where banks of relays are provided. These relays each control an individual fire fighter's telephone, and dial that phone when activated.

How system works

When an alarm is received, the operator records the pertinent facts on the blackboard. He picks up the alerting phone, presses the "alert" button on the base of the phone and sets the transcriber to "alert." He dials 5, and 70 phones start to ring simultaneously. He holds down the "dictate" key on the transcriber and waits (about three to five seconds) for the red pilot light. Still holding down the key, he dictates the alarm message (Example: "General Alarm—234 Smith Avenue—Dwelling—Code 351"). Firemen who have already picked up their phones will hear this dictation. The operator then turns the transcriber control to "automatic answer" and pushes the "automatic answer" button on the phone. The dictated message is repeated continuously for a period of three minutes. This cycle may be terminated at any time, or may be extended for additional units of three minutes. The operator hangs up but the ringing of phones will continue for three minutes or until answered. Instead of hanging up the alert phone, the operator may push a third button, "repeat," and thus monitor the transcription. If an error is noted, "O" is dialed, which erases the previous message. The above steps are then repeated, correcting the error.

After any use of the system, "O" is dialed to erase and restore the system to readiness for the next use. A test of all components up to and including the relays at the telephone company central office may be made by following all of the above steps, except that "9" is dialed instead of "5." If the test message can be heard clearly and completely upon monitoring, the system is in working order.

While dialing "5" will normally ring all 70 phones, the system will not override a busy signal on any individual phone. Although engineering-wise this could be readily accomplished, as a matter of policy it is not done, since it is said the public service commission would consider the override a breach of the customer's privacy. However, if a line is busy, the alert signal will "camp on" to this line, and if the receiver is replaced before the three minute limit, the alert signal will come through.

No facilities are provided to indicate which phones have been answered. This, again, is not an engineering problem, as such facilities can be made available. The answer here is one of cost, which would be considerable.

Central office relays are provided in banks of ten, with a minimum of two banks required as a basis for installation of the system. Any number of banks can be provided above the minimum and, although the Garden City installation is all on one exchange, the system can be operated to serve more than one exchange.

Selective alerting possible

The plugged holes on the alert phone dial may be used for selective alerting. For example, one number could be used to ring only chief officers' phones, another to ring only the phones of members of a rescue squad.

At present, Garden City is using this system only as a supplement to conventional methods of alerting firemen, which include the three sirens and three coded

Continued on page 203

The author points out to Fire Engineering's editor, Don O'Brien, how connection becomes less rigid, but does not collapse, as it reaches pumper working under a high vacuum—*All photos courtesy FDNY*

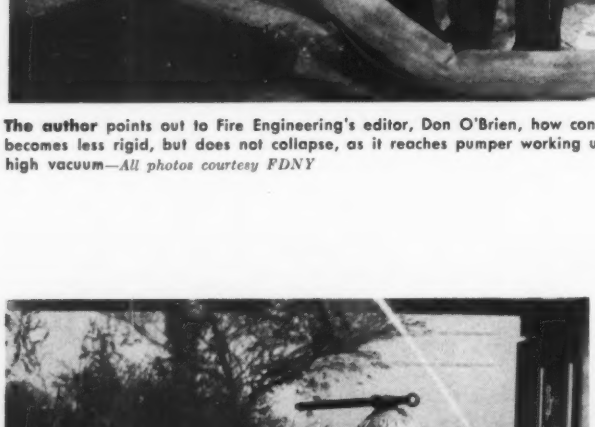
A Further Study

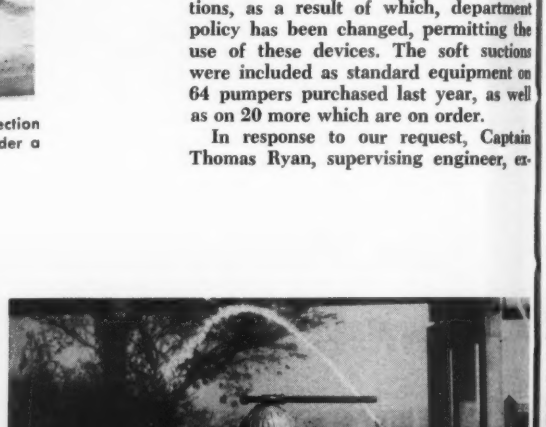
By THOMAS RYAN, *Captain*
Supervising Engineer Unit No. 1
New York Fire Department

Inquiries from readers concerning a previously published article, "Comparative Tests of Suction Connections," by Henry T. Hanson, (FIRE ENGINEERING, September 1958) were such that the editors have deemed it advisable to seek additional information and to evaluate other aspects of this timely subject especially in regard to hydrants of good flow characteristics.

In the early part of 1958 the Supervising Engineer Staff of the New York Fire Department conducted extensive tests on the use of soft hydrant connections, as a result of which, department policy has been changed, permitting the use of these devices. The soft suctions were included as standard equipment on 64 pumpers purchased last year, as well as on 20 more which are on order.

In response to our request, Captain Thomas Ryan, supervising engineer, ex-





Test 1 **(top left):** Maximum hydrant flow determined by supplying deluge guns from two pumpers, using hard suctions. Flow readings were taken at zero intake pressure and also at point of pump cavitation. Vacuum gauge was connected by flexible hose to suction side of pumper

Test 2 **(above):** Using one hard and one soft connection. Pump speed was increased until maximum vacuum was obtained on intake side of each pumper. Replacing hard suction did not materially affect discharge

Test 3 **(left):** Rigidity of soft hydrant connection is tested and vacuum readings checked by Don O'Brien and Frank Haniffa of Fire Engineering staff. Tests showed little increase in total discharge when working below zero intake pressure on pumper

# of Soft Suction Hose Operations

plains these tests which have already been published in a New York fire college bulletin. It is interesting to note that although the media and procedures differ widely, the general conclusions reached in these and the previously published tests are practically identical. It is hoped that the detailed information in this article will further remove some of the prejudice and suspicion which have existed in the past and still do in some departments regarding these connections, which retain few of the disadvantages and incorporate many advantages over hard suction connections.

A SERIES of tests of soft suction hose were recently conducted at the New York Fire Department's training grounds on Welfare Island. These were complementary to those which were conducted on January 31, 1958. Unfortunately, due to practical difficulties, it was not feasible to use the same hydrant at the original test on Randall's Island. Thus, the same maximum flows and exact readings could not be duplicated at the second site on Welfare Island, where the accompanying photos were taken. Here, the test hydrant was clearly of greater capacity, resulting in different flow and static pressures, since the size, length, age and condition of the supply mains and other variable factors all have a marked effect on these items. However, because losses and gains have a definite relationship to the different flows, varying approximately as to the square of the flow, the same principles clearly applied under both test situations.

The greater maneuverability, lighter weight and other inherent advantages of this type of connection over the standard hard suction represent a considerable factor in applying water on a fire faster and are for the most part obvious, requiring no detailed explanations here. However, there appears to have been overemphasis placed on a conviction that low or negative pressures on the intake (suction) side of the pumper will tend to collapse the soft sleeves resulting in loss of water. Considerable investigation and usage on both the testing and fire grounds have disproven this misconception. In the tests, emphasis was placed on working under conditions which some believed were conducive to loss of water supply through suction hose collapse.

TEST DATA— WELFARE ISLAND SERIES

Equipment

1. Two 750 gpm centrifugal pumpers connected to one 4½-inch and one 2½-inch outlet.

2. Two 10-foot lengths of 4½-inch hard suction hose and two 4½-inch soft suction hose, 12 feet long. Both types had 4½-inch female couplings on one end and 4½-inch male butts on the other. For connecting to the hydrant in simultaneous operation a 4½ x 4½-inch double female swivel and a 4½-inch x 2½-inch double female reducing connection were provided.

3. Two portable monitor nozzles with 1¾-inch tips, each supplied through a 50-foot length of 3-inch hose.

Procedure

The tests were conducted in three phases and resulted in the following data:

Test 1. One length of hard suction was connected from the hydrant to each pumper. The intent in this phase was to determine the maximum amount of water available from the hydrant at zero intake pressure on the pumper, and also when working at the maximum vacuum obtainable.

A discharge of 643 gpm was first obtained on Pumper A (from 2½-inch outlet) and an attempt made to maintain this discharge while maximum discharge was obtained from Pumper B (from 4½-inch outlet of hydrant).

Results	*Pumper A (2½-inch outlet)*	*Pumper B (4½-inch outlet)*
Engine Pressure	**84**	**70**
Gate Pressure	**60**	**50**
Nozzle Pressure	**50**	**42**
Discharge in G.P.M.	**643**	**606**

Total discharge, both pumpers: 1249 gpm.

At this point intake pressure on Pumper A was zero. Increased motor speed on Pumper B beyond this point gave very little additional water to either, with both pumpers working at vacuum. Engine speed was then increased to point of pump cavitation. At this point Pumper A's gauge reading was 30 inches of vacuum and Pumper B's reading was 15 inches of vacuum.

Discharges under this latter set-up were:

Pumper A—560 gpm
Pumper B—761 gpm
Total discharge, both pumpers; 1321 gpm

Working at maximum vacuum obtainable	1321 gpm
Working at zero intake pressure	1249 gpm
Difference	72 gpm

Thus, an average gain of only 36 gpm (or less than 3 per cent per pumper resulted from working in this unusual and undesirable manner. Because of the excessive velocity of flow through the main, the water was highly discolored. The difference in vacuum readings on the pumpers is explained by the fact that the supply to one of them had to overcome friction and other losses in the 2½-inch outlet as well as in the 2½-inch x 4½-inch swivel connection.

Test 2. The 10-foot length of hard suction on Pumper B was replaced by

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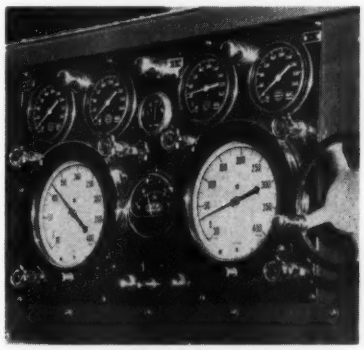
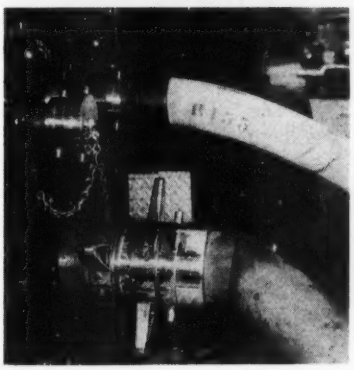




Careful positioning of pumper is still important when employing soft suction. Pumper discharge and inlet pressure (top) are materially affected by sharp kink in connection (above). Benefits of strong flowing pressures on hydrant (below) may thus be nullified

What Can a Buff Club Do?

By PAUL C. DITZEL

Ralph O. G. Fisher, member of Chicago Fire Fans Association and the 5-11 Club of Chicago, assists injured fireman to ambulance at an extra alarm fire in the Windy City

A FAVORITE SUBJECT for discussion around fire stations and buff club quarters concerns the mixed blessings with which fire fans are received by various departments and fire chiefs.

In this era when business and professional organizations are taking a new look at their public relations, many buff clubs are doing likewise.

As one well-known buff puts it: "If we are going to continue to be warmly received around firehouses and at the scenes of fires, we've got to do something to merit such recognition and to prove that we are genuinely interested in the progress and welfare of the fire service and not mere thrill-seekers."

Many clubs are serving their departments and their communities by maintaining canteens and performing other duties not ordinarily associated with attendance at major outbreaks.

What else can the buff clubs do?

The editors of FIRE ENGINEERING, notably Roi Woolley who, himself, has been a buff as well as an active fireman, have given this subject much thought over the years. They have seen some clubs perform yeoman duty and others become political Frankensteins. Ten years ago Mr. Woolley drafted a preliminary "constitution," if you will, for the guidance of buff clubs and over the years it has undergone distillation and change. What follows is a sort of elemental montage of FIRE ENGINEERING's ideas on the subject, plus those of the writer of the column "Among the Buffs" which has been a long-time feature of this magazine.

"Buff clubbers" attract the most public and fire department attention during large fires and it is here that many of them have inadvertently brought discredit upon their hobby, in general—and upon their own organization, in particular.

No self-respecting buff wants to bring down criticism upon himself or his club. Point out the errors of their actions to most buff clubbers and they'll willingly try to reform. Yet too many of the fraternity fail to understand and appreciate the relation with the fire department they admire and espouse and the importance of repaying it with more than lip service in return for the badge or card or other favor bestowed by the fire department.

Behavior at fires

In view of this fact, a few simple suggestions on how to improve better buff and fire department relations may be in order:

1. Keep out of the way unless requested to help. One over-eager buff in a midwestern city had yanked three sections of hose off the pumper by the time the officer-in-charge gave orders for the rig to be spotted some distance away.

2. Keep quiet. Keep comments on the way the fire is being fought to yourselves. On Christmas Eve a few years ago a correspondent for FIRE ENGINEERING was covering a three-alarm fire in the industrial district of Los Angeles and overheard a buff member of another large metropolitan city making suggestions as to how to fight the fire to a supposed civilian. The civilian turned out to be a member of the LAFD's crack arson detail.

3. Refrain from ganging up, especially where the "gang" will be seen, or where it may be in the way.

4. Refrain from bothering officers or members of the department with foolish questions, or worse still, offering advice. An open mouth can only help fan the flames.

The widespread misconceptions concerning the purposes and goals of the buffs have been caused to a great extent by their attendance at fires where they apparently served no useful purpose. Here's a chance for pre-planning in buff work just as it is done in the departments where fires are fought before they break out.

How buffs can help

Details of buffs can, or could if permission is granted, assist in such ways as:

1. Report to the canteen and assisting the buff member in charge.

2. Report to the ambulance or first-aid station to stand fast or work as ordered. Many clubs have taken advantage of free Red Cross courses in first aid. San Francisco's Phoenix Society members also serve in the Red Cross' Disaster Service.

3. Serve on the fuel unit or aid the driver if he needs help.

4. Attend the searchlight to assist the operator.

5. Report to the rescue unit to stand fast at the truck and assist as needed.

Moreover, members who have the status of auxiliary dispatchers may serve their departments and their communities by reporting to respective fire alarm offices if the size or nature of the emergency suggests. In many cities trained buffs assist regular fire alarm dispatchers and operators.

To carry out these and other helpful duties, it might be advisable for buffs to start their prearrangements by delegating a senior member of the club as "officer of the day" to take charge and assume responsibility for the members' work.

By prearrangement with the fire chief or commissioner, his post and his alone, should be such as to permit quick contact with the departmental officer in charge. Other members should be well out of the way. His task would be to

New York Third Alarm Assn. member Henry Florschiem sets up canteen in his own station wagon at Wooster Street five-alarm fire on February 14, 1957—*Photo by Barclay G. McKeough*

receive any instructions which the officer might desire to have relayed to the members on whatever subject the officer believes they could be of aid. He should naturally be seen and not heard. Discretion and diplomacy should dictate his actions and behavior.

Obviously, special details of buffs should be composed of members best fitted for the tasks in question. This suggests more study into the qualifications of respective club members to locate those best qualified for performing certain duties. It cannot be too strongly stressed that these matters should be discussed and decided upon beforehand, with the commissioner or fire chief.

Although the number of hours the buff club members come in contact with the public is brief compared to the days, weeks and months of waiting for duty, there is much that can be done to help departments in the intervals between emergencies during the routine of fire service work.

Ormind Abbott (left) and Adolph Frankle of New York Third Alarm Assn. carry coffee and sandwiches to fire fighters during Wooster Street operations
—*Photo by Barclay G. McKeough*

Buff clubs should impress upon their departments' chief officers that their members stand ready at any hour of the day or night to help carry out special assignments such as guiding department visitors.

A club welfare committee might cooperate with firemen's organizations with the primary object of assisting in caring for sick and injured firemen particularly during the convalescent period, by providing entertainment, reading matter, etc. A warm friendship between the author and a battalion chief grew out of a crippling back injury to the latter. He visited the chief regularly in the hospital and later, when the officer was retired on disability, he assisted him in obtaining a job in private industry.

A detail of buffs might well formally attend all departmental functions where propriety suggests, such as funerals, award presentations, etc.

Moreover, individual fire companies might be provided with direct cooperation via the members located nearest the respective fire stations. The buff might help in the kitchen, in watching the house when the company is absent and in other ways.

Certainly, get behind all departmental programs that will improve local fire service conditions. Every buff should be an unofficial booster and promoter—not only the "home" department but the fire service in general. Singly and jointly, buffs should linitiate such publicity as will reflect credit upon the department, but in so doing, it is always wise to first obtain the approval of appropriate fire and club authorities.

There is much that can be done by buffs, individually and collectively, to further the work of the fire service. Primarily, it is a matter of applying common sense, and having a wide-awake outlook for ways and means of serving as a link between the fireman, the buff, and the community. □□

PHONE SYSTEM

Continued from page 199

air horns. All alarms, other than "stills" handled by the paid men on duty, are sounded on the outside alarm units, with confirmation by the new telephone system. Present plans do not call for any change in procedure in the foreseeable future.

The great advantage of the new system is that it gives the firemen the exact location of the fire instead of just the general area. On a recent alarm, where a wrong zone number was sounded on the air horns, but the correct address was given on the phone, some 30 firemen arrived promptly at the correct location, even though a somewhat greater number went initially to the location indicated by the air horn.

Starting the day after the system was installed, Garden City firemen were alerted to nine alarms over a period of six days by the new method. In all instances the system worked well and authorities felt it had passed its first test most satisfactorily.

How it came about

In 1955, when Henry D. Sayer, Jr. was chief of the Garden City department, he attended the Omaha conference of the International Association of Fire Chiefs. There he saw displayed a pilot model of a slightly different telephone alerting system, and brought back literature on it. When Garden City volunteers complained that they often could not hear the alarm horns or sirens, Chief Sayer suggested that the New York Telephone Company be consulted about the feasibility of such a system. The present chief, Wilbur A. Quint, is associated with the New York Telephone Company. Working with him on this project were Harold De Waltoff, communications consultant, and Joseph T. Romo, sales manager of the telephone company. While the Garden City installation is a pilot system, indications are that it will soon be available to other communities served by the Bell System. □□

Chicago Water System Improvements Slated

Chicago Mayor Richard A. Daley has announced start of a five-year $7,750,000 improvement program for the city's water supply system which is expected to give increased fire protection. The program includes laying 24-inch, 36-inch, 42-inch and 48-inch mains to replace those of small capacity and the changeover of most of the 1,800 remaining 2½-inch and 4-inch hydrants with 4½-inch high-flow Chicago-type.

Fire Commissioner Robert J. Quinn stated the new hydrants will enable two 1,000-gpm pumpers to operate from a single hydrant in most cases. The changeover of Chicago's 45,000 hydrants is expected to be completed by 1961. Remainder of the extensive construction work is expected to be finished by 1963.

Press operator shows the "before and after" difference of a plastic steering wheel frame and the finished cellulose acetate butyrate product after it emerges from a new giant injection molding press—*Courtesy United States Rubber Company*

How plastics are made

PART II

Additional background information on plastics as they affect the fire service

By **FRANK HANIFIN**

WHILE PLASTICS are vital to our defense program, and have contributed immeasurably to the ease and comfort of our daily lives, newspaper reports and correspondence from fire fighters indicate that, at times, these materials have made fire extinguishment more difficult. These two aspects of the nation's fastest growing industry prompt us to seek an answer to the question, "Are plastics a boon or a bane?"

In the February issue of FIRE ENGINEERING, we attempted to define plastics. As one writer on the subject has noted, "Plastics is a complicated material and even technical experts differ as to its exact definition." The Society of the Plastics Industry gives as a generally accepted definition, "any one of a large and varied group of materials consisting wholly or in part of combinations of carbon with oxygen, hydrogen, nitrogen and other organic and inorganic elements which, while solid in the finished state, at some stage in its manufacture is made liquid, and thus capable of being formed into various shapes, most usually through the application, either singly or together, of heat and pressure."

In the previous issue, we also gave a brief history of plastics. We pointed out the two main divisions—thermoplastic and thermosetting. Plastics may be classified also as cellulosics and synthetic resins. While more than 700 trade names were listed by the National Board of Fire Underwriters in 1955, the majority of these are now included in about 14 basic plastics. We reviewed briefly the growth of the industry and gave examples to show how widely these materials are used in industry, office, home and even in fire fighting.

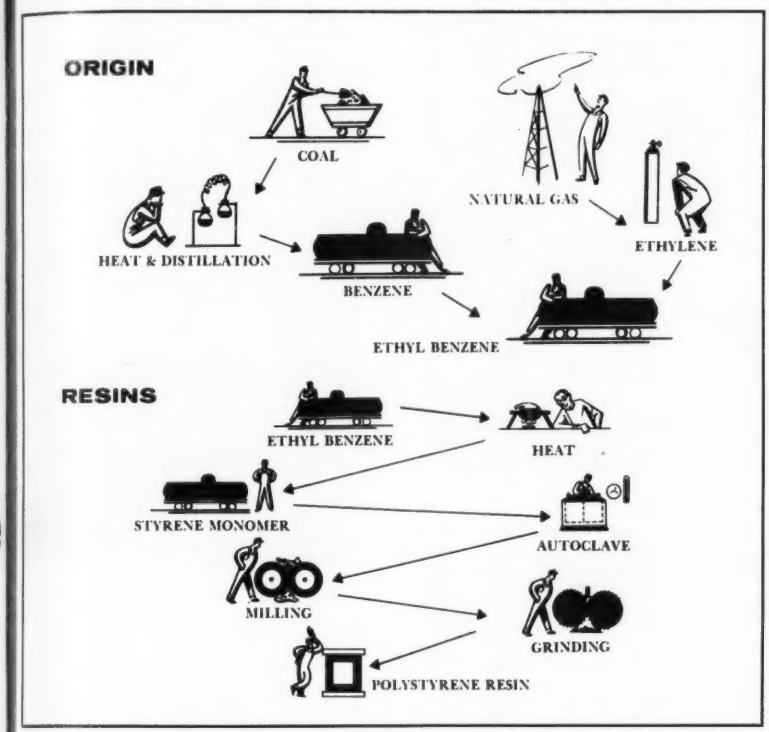
The manufacture of the basic plastics from which these myriad materials are fabricated has been compared to a chef preparing different dishes. The plastics chemist draws his ingredients from such abundant natural resources as air, water, natural gas, petroleum, salt, limestone, wood. He varies his selection of chemicals secured from these natural sources, the amounts he uses of each, the way he mixes and works them, according to the particular end-product planned.

Basic elements combined

The chemist literally takes his natural resources apart, breaking them down to their basic molecules and atoms. Using heat, pressure or chemical action, he can cause some of them to combine, creating a new material that never existed in nature. Thus polystyrene, is made from the raw materials coal and petroleum or natural gas. The chemical benzene is extracted from the coal. The gas ethylene is taken from the petroleum or natural gas. The benzene and ethylene are then linked to form ethyl benzene. It is this ethylene benzene, after being processed with heat and pressure, milled and ground, that emerges as polystyrene plastic. If, however, the chemist combines the gas ethylene with chlorine, taken from salt, he obtains one of the vinyl resins, vinyl chloride. Ethylene gas alone can be processed to produce polyethylene plastic.[1]

In creating a specific plastic various materials are used in different proportions

A plastic fire helmet which is a replica of the standard eight-comb leather helmet is now available. According to the manufacturer, advanced molding techniques produce a more flexible, more fracture-resistant plastic than is possible under common methods
—*Courtesy Cairns & Brothers, Inc.*



Coal and natural gas are processed as shown in illustration to produce polystyrene resin, first discovered in 1831. Finished products include wall tile, radio housings, food containers, jewelry, kitchenware and toys—*Courtesy Bakelite Company*

depending on the end product desired. Binders are the synthetic resins, natural resins, cellulose derivatives or protein base materials which form the important cementing ingredient of the compound. Fillers may increase the bulk of the plastic compound, reduce shrinkage, increase heat resistance, improve impact or shock resistance and provide dielectric strength. Plasticizers are either high-boiling organic liquids or low-melting solids. They are added principally to thermoplastic resins to develop new properties. Among these are moldability, flexibility, gloss and resistance to chemicals, heat, moisture and abrasions. Solvents are often required in plastics to give them the fluidity necessary for brushing, spraying and forming. Dyes or pigments may be added to achieve desired colors. Lubricants are materials which are either added to a plastic mix or coated on the interior of the mold to aid removal of the finished product. Special additives such as catalysts, stabilizers, extenders and hardeners are also used in compounding. Of these components, the catalysts are of particular importance from the hazard standpoint. The use of organic peroxides as catalysts in some plastics poses a danger since a number of these peroxides are considered to be very hazardous chemicals.[2]

A catalyst is a chemical used to alter the speed of a reaction between two or more substances. In the manufacture of plastics, this controlled reaction is polymerization, a repetitive reaction in which single molecules of one or more substances are joined to form larger or longer molecules in a chain structure of set pattern, with no other by-products being formed. The single molecular structure is called a monomer, the complete chain structure is polymer. Copolymers are linkages made by mixing monomers of two or more substances.[3]

Condensation is a transformation reaction, whereby like or unlike molecules form a more complex compound, usually with the separation of water or other substance. In most cases, the products of condensation are thermosetting resins; those of polymerization, thermoplastic resins.

Example of resin manufacture

A typical manufacturing procedure, as described by Arthur Dunham in "Working With Plastics," illustrates the role of these various ingredients and processes:

"Equal molecular portions of phenol and formaldehyde are piped into a steam-jacketed, nickel-lined digester. An alkaline catalyst (ammonia or caustic soda) is added, and the temperature of the digester is raised to 195° F. At this temperature the phenol and formaldehyde unite to produce a base resin the color of honey and having the consistency of cold molasses. Each chemical has lost its individual identity and takes on an entirely new character. This is called a *condensation reaction*—a joining together to produce a large molecular structure. In this process a small amount of water forms and must be carefully drawn off.

"The resin is next poured into large, flat pans or onto a cooling floor, where it soon cools and hardens. The cooled resin is broken up and reground, and various other ingredients are added, such as lubricants, dyes or color pigments and fillers.

"The mixture is thoroughly blended by passing it through heated rollers. Finally, it is reground and screened to specified particle size for molding powder.

"For use in laminating agencies, the resin is taken directly from the cooling floor and dissolved by means of a solvent. In this liquid form it is ready for impregnating materials in the production of laminated plastics, or it is used in the manufacture of paints, varnishes and lacquers."

Processing methods

The molding powder is processed into the finished product in one of several ways. Molding, the art of shaping any plastic material with the use of a form or matrix, is the means of mass production in the plastics industry. When the molding powder is heated, it melts to a viscous liquid that can be forced into a mold of desired shape. Molding may be done by compression, transfer, injection or extrusion.

In *compression molding*, usually used for thermosets, an accurately weighed amount of plastics powder, generally in the form of a preformed tablet, is placed in the die of a huge press. Heat and pressure are applied, causing the plastic powder to become fluid and flow into all parts of the highly polished die. In the closed mold, the material undergoes a chemical reaction that cross-links the polymer chains and thus hardens into a permanent shape. The mold is then opened and the solid piece removed. This process has been compared to making waffles in a waffle iron.

Transfer molding is a variation of compression molding. Molding compounds are placed in a loading chamber where the action of a plunger softens them and forces them into the cavities. Here both heat and pressure are used for the final cure.

In *injection molding*, only thermoplastic materials are used. Powder or granules are placed in a hopper. As an injection ram forces it forward, the material is heated. It reaches an injection nozzle in a liquid state and is injected into a cold mold, where it cools and sets.

Extrusion is a variation of the injection molding process. Softened plastic is forced through a nozzle which forms the desired shape. Extrusion has been likened to tooth paste or shaving cream being squeezed from a tube. There are two groups of extruders. One turns out sheets, film, sheeting, rods, tubing, special shapes, pipe and wire covering. The other group produces the thread-like plastic monofilaments which, when woven into cloth, find use as seat covers for autos, buses, trains and furniture, and as insect and industrial screening.

In the four processes just described, the finished or intermediate product is formed by the application of heat and

Continued on page 230

Above: Photo was snapped at instant of explosion. Man in suit is at left (arrow) near corner of building. **Below:** Hebron assistant chief rises from ground as debris of explosion is still falling. Second man in proximity suit moves in to assist

Fire Fighter Lives through Explosion

On a hot summer day the Hebron, Ohio, Volunteer Fire Department responded on an emergency call to a storage building loaded with debris. A flammable liquid, later determined to be 65 gallons of gasoline, had spilled and the atmosphere was heavy with fumes.

The Hebron assistant chief, aware of the hazard, put on a proximity suit, manufactured by Fyrepel Products, Inc., Newark, Ohio, which is carried on the apparatus and cautiously approached the building for size-up.

An explosion occurred as he peered through a door. The terrific force of the blast raised the building roof and flattened the walls. The chief was hurled 8 or 10 feet in a "ball of flame" according to eyewitnesses. This prevented him from being pinned under the debris. According to the officer, he was saved from severe burns by the protective action of the suit.

Simultaneous Fires at Same Cincinnati Box

The Cincinnati, Ohio, Fire Department experienced a rarity on December 12 last. At 9:40 a.m., Box 2238, McMillan and Boone, was pulled for a fire directly across the street. Engines 16 and 19, Truck 4, Salvage Corps 1 and Battalion 5 (Chief R. Wedig) responded and found on arrival that the Moorman and Otten Co. tile works was well involved.

Chief Wedig sized up and reported to Fire Dispatcher F. Parr that he had a working fire and would be on the scene for some time. Engine 23 was then relocated in Engine 16 quarters.

At this time a man ran across the street to Chief Wedig and reported a fire at the Miller Dairy plant, 200 feet to the east, at the corner of McMillan and Dix. While Chief Wedig personally radioed the alarm, Chief John Frank of the Salvage Corps, armed with a foam extinguisher, ran to the scene and succeeded in holding the flash fire until the first-in company arrived with a fog line. Chief Wedig elected to handle the second himself for fear another alarm from the box might be misunderstood as a second for the tile works fire.

Engine 23 was just backing into the quarters of Engine 16 when the box was struck for the second fire. As a result it quickly arrived on the scene to relieve Chief Frank. It was followed by Engine 42, Truck 9, Battalion 4 and Salvage 2. The tile company fire resulted in heavy loss. The dairy plant was held to $750 damage. *Pat Holz*

CD and Allied Courses Offered by OCDM

The Office of Civil and Defense Mobilization, Eastern Instructor Training Center, Brooklyn 35, N. Y., is offering courses to train instructors who will return to their communities and train individuals to serve in their specialized fields during natural or wartime disasters. The Center is at the Manhattan Beach base recently used by the Air Force. "Radiological Monitoring for Instructors" is presently being given. "Light Duty Rescue Instructor Course" is expected to be available early in June. "Basic Civil Defense" will commence April 6. "Principles of Organization and Staffing" will commence in mid-June. "Emergency Operations" will start about August 1. Each course covers five days. Lodgings are available at $1.50 per night.

Contest Grand Award Winners Announced

Oshkosh, Wis., and Ocean Falls, British Columbia, have been named grand award winning cities in the 1958 NFPA annual Fire Prevention Contest. The awards are based on year-round efforts to reduce fires and educate people in fire safety. More than 1,500 entries were received.

Winners in other divisions are: Industry—Ford Motor Co., Pico-Rivera, Calif.; General Services Administration Region 3, Washington, D. C.; U. S. Army—Fort Ord, Calif.; U. S. Air Force—Wright-Patterson Air Force Base, Ohio; U. S. Navy—Naval Ammunition Depot, Hingham, Mass.; and Department of Defense, Canada — HMC Dockyard Esquimalt, British Columbia.

Judges of the contest from the United States were: S. Bruce Black, board chairman, Liberty Mutual Insurance Co., Boston, Mass.; Reynold C. Malmquist, president, International Association of Fire Chiefs, Minneapolis, Minn.; and J. Sharp Queener, director of safety and fire protection, E. I. duPont de Nemours and Co., Wilmington, Del.

Judges from Canada were: Alexander Addie, superintendent of insurance, Price Brothers and Co., Ltd., Quebec; A. Leslie Ham, chief counsel, Canadian Underwriters Association, Montreal; and C. A. Thomson, Dominion fire commissioner, Ottawa.

Indiana Instructors Elect Officers

Ralph E. Ellenwood, chief instructor, Fort Wayne Fire Department, was re-elected president of the Indiana Certified Fire Instructors Association during the second annual fire instructors training course held recently at Purdue University.

Ellenwood, seated in the photograph, being fitted with a helmet by (left to right) Herbert L. Dwyer, chief instructor, Indianapolis Fire Department, first vice president; Richard Templin, Jr., captain-instructor, Muncie Fire Department, second vice president; and Chief Peter Kuipers, Lafayette Fire Department, treasurer and a member, board of directors, Indiana Fire Chiefs Association.

Other officers elected by the instructors association include Charles L. Roblee, Public Safety Institute, Purdue, secretary; Robert F. Hamm, Indiana Rating Bureau, Indianapolis, chaplain, and the following directors: W. H. Crossman, Jr., Napoleon Volunteer Fire Department; George W. Tigner, Wayne Township Fire Department, Indianapolis; Walter G. Pandak, East Chicago Fire Department; Fred Koltz, Richmond Fire Department; and Ralph M. Daily, Eli Lilly and Company, Lafayette.

Thirty men were certified by Purdue at the close of the second annual training course. Certificates were presented by Professor Shelby Gallien, director of the Public Safety Institute. The course included discussions of teaching techniques, public speaking, demonstrations, visual aids, practice teaching and leadership.

January Fire Losses

Estimated fire losses in the United States during January amounted to $112,983,000, the National Board of Fire Underwriters has reported.

According to Lewis A. Vincent, NBFU's general manager, this $112,983,000 loss represents an increase of 13.1 per cent over losses of $99,918,000 reported for January 1958, and an increase of 12.4 per cent over losses of $100,523,000 for last December.

These estimated losses include an allowance for uninsured and unreported losses.

L. A. Fire Captain Killed at Mutual Aid Fire

One Los Angeles City fireman was killed while on a mutual aid response assisting the Los Angeles County Fire Department at a rug company fire in West Hollywood on December 11. Acting Captain James Hassan, 41, of Engine 27 was pronounced dead at Citizens Emergency Hospital just across from the Magic Rug & Cleaning Co. at 7518 Santa Monica Boulevard.

Hassan was leading a five-man crew moving a hose line into the burning structure when the roof collapsed. Another city fireman, Gerald Baird, was also injured as were several County firemen trying to rescue Hassan.

The alarm was turned in at 9:16 p.m. directly to County Station 8, a block from the rug firm. Engines 8, 208, Truck 8 and Engine 7 responded. The structure was fully involved and at 9:23 a second was requested, bringing County Engines 38 and 58. One minute later a L. A. City first-alarm mutual aid assignment was called for, bringing Engines 27, 41, 51, Truck 27, Salvage 27 and Division Chief Tingley.

County units were under command of Acting Assistant Chief George Brunton. Investigators said they believed the fire started when a belt caught fire and sparks ignited lint on the floor. *—Cliff Dektar*

Glasgow Keeps Its Street Fire Alarm System

Writing on means of calling the fire brigade, Firemaster Martin Chadwick, CBE, MIFireE, in his 1957 report on Glasgow Fire Brigade, says: "It has been often pointed out to me that some cities are relying more now on "999" calls, but, nevertheless, Glasgow is retaining its street fire alarm system (558 boxes) because—and this is most important—a remarkable number of people still cannot work the automatic dialing system on the telephone."

He commends to all sensible business managements the automatic thermostatic fire alarm connected with the fire brigade switchboard.

Although the 7,432 calls were more than 4 per cent fewer than those in the preceding year, they were 65 per cent above the 4,500 calls received in 1948.

Of the 2,678 false alarms, 815 were malicious; in this connection the brigade obtained the conviction of a man, three boys and four girls. Where fire raising was involved, the conviction of four men and four boys was secured.

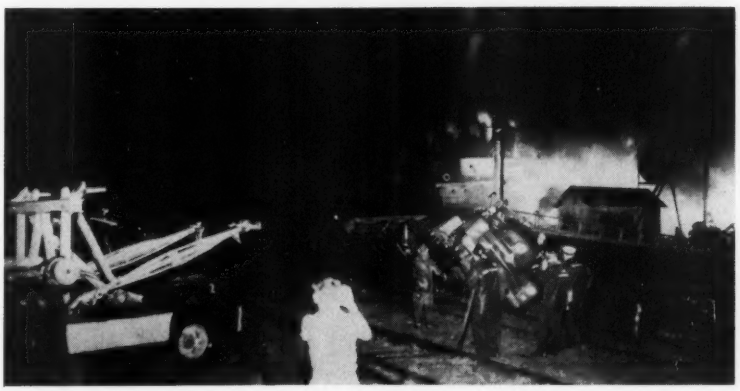
There were 2,435 fires—55 serious, 2,076 dirty "lums," and 244 special service calls. Extinction was by hand pump and extinguisher in 818 outbreaks; hose reel, 1,061; jet, 245 (37 at one fire); and other means, 308. On three occasions there was no need for intervention. Compared with the preceding year, the estimated direct loss rose by £1,193,908 to £2,029,498. Twenty-five persons died in fires.

Fire, August 1958

Upset Aerial Righted; Continues In Use

Tow trucks were used to right an aerial ladder which overturned in the early stages of a three-hour battle to extinguish a fire in a huge oil tanker at Port Tampa, Fla., last summer. The blaze broke out shortly after the 575-foot Gulfdeer began unloading 8 million gallons of gasoline and oil.

Chief C. F. Dreves, Tampa Fire Department, reported to FIRE ENGINEERING that his department was called to assist at the blaze outside the limits of the city. It was necessary to back the aerial down approximately 500 feet of multiple railroad tracks and to place it in position on the track bed. Because of several weeks of rainy weather, the shoulder of the bed gave way under the front and rear wheels of the tractor and trailer and the supporting jacks. Carl McAlester, who was at the top of the ladder when it overturned, was unhurt. After the truck was righted, firemen continued to employ it to fight the fire.



New Pumper for Glenwood Landing, N. Y.

The Glenwood Hook and Ladder, Engine and Hose Company, of Glenwood Landing, Long Island, recently put into service a new 1000-gpm pumper. The radio equipped apparatus, built by the Approved Fire Equipment Co., of Island Park, L. I., is of the cab-forward type, with a Waukesha 300-hp motor, mounted amidships and a Hale pump. It has a 300-gallon capacity tank and two booster reels, each with 200 feet of 1-inch hose equipped with Hardy gun-type nozzles.

Mounted above and to the rear of the motor is a deck gun, which can be supplied from the pump itself, or from two intake gates mounted at the rear.

The divided hose bed has a capacity of 2,000 feet of 2½-inch hose and a small bed built along the driver's side holds 300 feet of 1½-inch preconnected hose. A tank directly in back of the operator's panel holds 12 gallons of liquid foam which may be proportioned to a 100-foot length of 1½-inch preconnected hose.

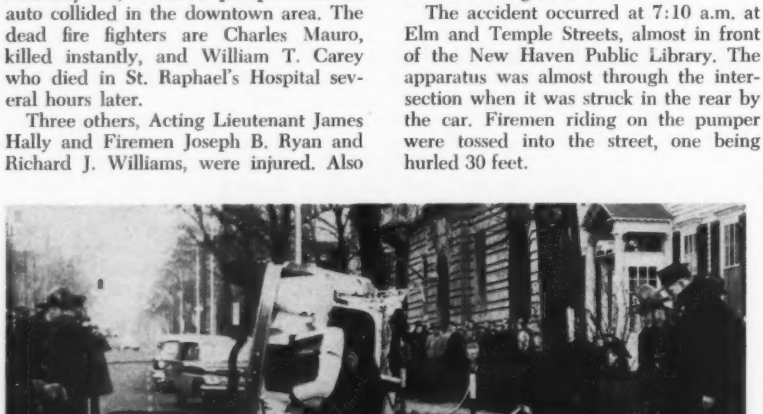
Four portable lights may be connected to the 110-volt alternator for illumination. The unit carries personnel equipment for 12 men, as well as a Scott Air-Pak unit.

Two New Haven Firemen Killed in Collision

Two members of the New Haven, Conn., Fire Department met death on February 14, when a pumper and an auto collided in the downtown area. The dead fire fighters are Charles Mauro, killed instantly, and William T. Carey who died in St. Raphael's Hospital several hours later.

Three others, Acting Lieutenant James Hally and Firemen Joseph B. Ryan and Richard J. Williams, were injured. Also hospitalized were the driver of the auto, James W. Reinhardt, and his wife whom he was driving to work.

The accident occurred at 7:10 a.m. at Elm and Temple Streets, almost in front of the New Haven Public Library. The apparatus was almost through the intersection when it was struck in the rear by the car. Firemen riding on the pumper were tossed into the street, one being hurled 30 feet.



After being struck by a private car, Engine Company No. 2's apparatus went out of control careening to the right for about 75 feet before making three complete rollovers. It slammed into a tree and spun around to rest on its left side. All five firemen on it were thrown off when it turned over—*New Haven Register photo*

The apparatus was responding to a box alarm for a minor fire in the Hotel Duncan, where damage to a smoldering sofa was estimated at ten dollars.

Fire Chief Thomas J. Collins said the pumper, valued at $22,000, was a total loss. The chief said the intersection was one of a few not protected by a radio system which turns all traffic signals red as apparatus approaches.

Tom Magner

East Peoria Firemen Die in Rescue Attempt

Two East Peoria, Ill., fire fighters, Assistant Chief Marvin Stein and volunteer fireman George Cornwell, were killed in a fire in a tavern which had living quarters above it on January 28. The men were trapped when they entered the second floor to search an apartment for occupants.

When the firemen arrived at the fire shortly after 9:45 p.m., they found fire between the walls, but nothing that appeared to be imminently threatening. Almost immediately, Stein and Cornwell went up an outside stairway to search for members of the Wilcox family. Later Mr. Wilcox disclosed that he had followed the two men to the second floor to tell them his family was safely out. He found Chief Stein in the doorway to a second room and lay on the floor talking to him. At that moment there was a terrific explosion. Wilcox rushed out, believing that Stein was behind him.

Fire Chief Lou Erickson said "the real fire broke out at the time of the explosion; the roof was blown off and the whole place became an inferno." Other firemen tried to get Stein and Cornwell out, but the flames were too intense.

Michigan Fire Inspectors Elect New Officers

The Michigan Fire Inspectors Society, at its ninth annual conference at Michigan State University, East Lansing, Mich., in September, elected Bela J. Marks, assistant fire marshal, Flint, president; Tom C. Moore, fire marshal, River Rouge, vice president; and Arthur P. Patriarche, fire marshal, East Lansing, secretary-treasurer.

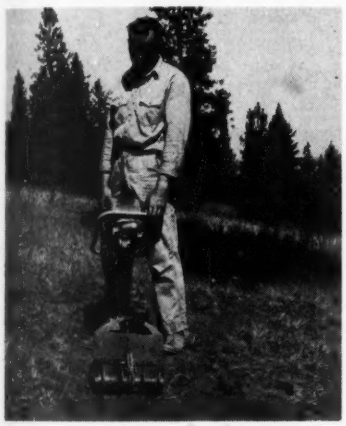
William Hanna, fire marshal, Ferndale; William Luck, chief inspector, Coldwater; and Paul Albright, inspector, Plymouth Township, were elected trustees.

Fire Inspector Phillip K. Alber, Lansing, former vice president of the society, was program chairman of the conference. Among the topics discussed were "Your Flammable Liquid Problems" by Miles E. Woodworth, secretary, Flammable Liquids Committee, NFPA; "Liquefied Petroleum Gas and Gases" by Clark F. Jones, secretary, NFPA Committee on Gases; "Organic Peroxides" by Anthony Burian, president, Plastic Engineering and Tool Co., and "Fire-retardant Paints" by Walker F. Wright, Albi Mfg. Co. There were also several panel discussions.

short cuts and gadgets

Applying Power to a Back-breaking Job

Raymond M. West of the Anaconda Forest Protection Service and Robert W. Steele, School of Forestry, Montana State University, have designed a power saw trencher, a lightweight combination trenching and cutting machine for fire line construction. It consists of two augers mounted on a shaft at the end of a standard chain saw blade. The two-way spiral augers, pitched so that soil and debris are cast equally to left and right, are 7 inches in diameter. Each is 6 inches wide so that a trench a foot wide can be constructed. They are made of abrasion-resistant steel and are keyed to a shaft which is mounted in bearings on the sides of the blade.



Power saw-trencher is designed to eliminate much of heavy labor during construction of fire line

Power from the saw motor is supplied to turn the augers through the cutting chain as the chain moves along the blade and engages the sprocket.

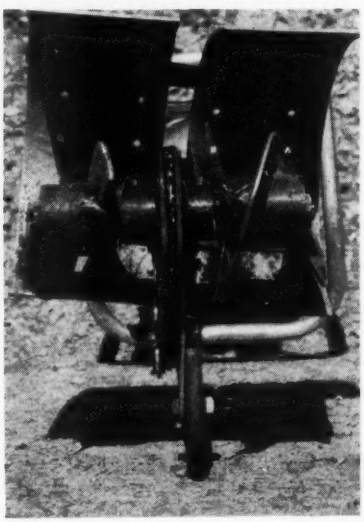
A small spiked wheel is mounted directly below the center of the assembly to take some of the weight and to allow for lateral stability when the machine is used. In operation, the machine is held at a steep angle resting on this wheel. The depth of the trench can be varied by raising or lowering the handle of the power saw motor to engage the rotating augers in the soil. A guard protects the operator from flying dirt and stones.

The suggested method of use is with a three-man crew, one with the trencher, one with a Pulaski tool for heavy cutting and digging, and one with a shovel for line clean-up.

The machine digs readily through sod and duff to mineral soil. It throws needles and forest litter out of the trench, and is easily moved along the fire line. It can be operated both forward and backward, on slopes or level ground. When it is necessary to cut a windfall or snag during the construction of a fire line, it is used as a conventional power saw, there being sufficient length of cutting blade back of the protective guard.

Advantages of new tool

The new tool is small and lightweight, and can be transported anywhere about a fire. Complete with blade, chain and augers, it weighs approximately 10 pounds and can be packaged for aerial delivery. It can be used on most standard chain saw motors and is easily attached by simply removing the original blade and chain. No special training is needed to operate the unit, which can produce an effective fire trench rapidly with a minimum of manual work.



Variation of new unit has curved, two-section guard and conventional wheel

Windfalls are no obstacle to unit. Operator simply switches from digger to power saw and quickly cuts through obstruction

The new unit was tested in all types of fuel encountered in forest fire fighting. In fuel rated extreme in resistance to control, consisting of slash, windfalls and a sod cover, the maximum amount of cutting was 7 feet per minute. In fuels rated medium in resistance to control, consisting of forest duff, some grass, small limbs and a few windfalls, the soil not too rocky, the unit cut 20 feet per minute. In fuels rated low, consisting of pine needles, shallow duff or grass, it cut 33 feet per minute.

Another important feature is that, for small fires where the machine can be worked close to the advancing edge of the fire, a huge amount of loose dirt is thrown by the digger, which can be used to smother the fire and rob it of fuel.

Just dial F-I-R-E

For citizens of Oneonta, Ala., it's easy to call the fire department by phone, no matter how frightened or confused they may be. Instead of having to remember, or look in the phone book for the fire department's number, they simply dial the exchange combination which precedes all local numbers and then dial F-I-R-E. For police assistance, they dial H-E-L-P and to summon a physician, D-O-C. For those who would rather do it the hard way, the ordinary fire department number is available too.

The Municipal South

Rockville Chimney Cleaning Device

The Rockville, Md., Volunteer Fire Department made a chimney cleaner from six wound springs, a length of chain, two "U" clamps, a piece of scrap iron and several sash weights. It is stored in a canvas bag. The firemen say it conforms to every chimney shape yet encountered and does a good job of cleaning. *U. of Md. Fire Service Bulletin*

FALSE ALARMS

Company School

The drill master stepped to the front of the room and by way of breaking the ice, remarked, "I've just been asked to come up here and say something funny."

At this point a voice in the back called out, "You'll tell us when you say it, won't you?"

The drill master answered: "I'll tell you. The others will know!"

A fireman went to a psychiatrist and complained as follows: "My wife owns 20 diamond rings, 15 diamond wrist watches, six mink coats and 300 dresses. I myself own a Rolls Royce, a Cadillac and two Bentleys."

The psychiatrist nodded, asked pleasantly: "So what's your problem?"

"My problem," the patient answered, "is that I make sixty dollars a week."

Chaplain: "I just heard your husband is in the hospital. What is wrong?"

Wife: "It's his knee . . . I found a strange woman on it."

Tillerman: "My wife has a terribly funny obsession. She is scared to death that someone will steal her clothes."

Driver: "Doesn't she have them insured under the new comprehensive home owner's policy?"

Tillerman: "Yes, we do, but that doesn't lessen her fear. She has someone stay in the closet and watch them. I found him in there the other night."

There was rumor that the small-town newspaper editor was not paying the minimum wage to his help. A government official went to see him.

"How many employees do you have?" asked the government man.

"Well," answered the editor, "there's the linotype man, the copy boy, the secretary, and then there's the half-wit."

"What do you pay them?"

"Well, I pay the linotype operator $2 an hour, and the secretary $40 a week, and the copy boy gets $30 a week and board."

"What about the half-wit?" the official asked.

"Oh, him, he gets his room and board and tobacco."

"Where is this half-wit? I'd like to see him."

"See him?" the editor replied, "Heck! You're talking to him!"

"Yes," said the doctor, "I'm convinced that it's some chronic evil that has deprived you of health and happiness."

Patient: "Sssssh! For heaven's sake—speak softly. She's sitting in the next room."

Plug Wrench: "For Pete's sake, what's wrong with these eggs?"

Shift Cook: "Don't ask foolish questions like that, I only laid the table."

Reputation is character minus what you get caught at.

"Is there a hydrant in the audience?"

Sidetracked

A passenger on a train bound for St. Louis was emphatic in his instructions to the pullman porter before retiring.

"I'm a heavy sleeper," he told him, "and when you wake me at 4 a.m. in Cincinnati, I'll be belligerent and say I don't want to be awakened. Pay no attention to me. See that I get up, get dressed and get off at Cincinnati. I have important business there."

He then tipped the porter ten dollars in advance.

When the man woke up, it was morning and the train was pulling into St. Louis. In a great rage he found the porter and employing extremely abusive language, gave him a terrible verbal lacing.

After the irate passenger had stomped away, another man who had observed the event, said to the porter: "How could you stand there and take that sort of talk from any man?"

The porter gave a wistful shrug and answered, "You should have heard the man I put off at Cincinnati!"

"Honey, what is your definition of a successful man?"

"A successful man? Why that's a man who earns more than his wife can spend."

"Well, how would you define a successful woman?"

"One who finds such a man!"

After the handsome and popular movie star had walked through the lobby several times, a pretty young girl stopped him and asked: "Are you looking for a particular person?"

"Yes," he answered.

"Well, I'm very particular!"

Still Alarm

Two fire fighters became engaged in an argument regarding the merits of the "home brew" each was making in their time off. To settle the matter they asked a local buff to sample a bottle of their labors and give an unbiased report on the amber liquid.

The hesitant buff decided discretion was the better part of valor and sent the two marked bottles to a laboratory for analysis.

Shortly he received the following report: "Dear Sir, We regret to inform you both of your horses have diabetes."

—Paul Ditzel

Earbanger: "Say, Captain, is it true that bulldogs won't bite you if you carry a flashlight?"

Hardrock: "Well, that depends on how fast you carry it!"

The average husband is proof that the average woman can take a joke.

Let's talk DOLLARS and SENSE about

EUREKA

Multiple-Woven

THE BEST is usually *least expensive in the long run.* And that goes double for fire hose! Here's why:

Your dollar spent for the lowest-priced approved hose can be divided over an average service life of about 4 years . . . or 25 cents per year. Suppose, however, you invest *not one* dollar but *two dollars* in the same footage of premium quality Eureka MULTIPLE-WOVEN Hose. According to the experience of users, your two-dollar investment in this uniquely constructed hose may well be spread over a useful service life of 16, 20 or even 24 years . . . or 8 to 12 cents per year!

In the long run, then, Eureka MULTIPLE-WOVEN may easily cut your hose expenditures *by more than half!* At the same time you'll have a hose you know won't let you down . . . won't warp or writhe excessively . . . and *will* deliver maximum pressure to the nozzle! *There's no other hose like it.* Specify it on your next order! You'll have the added satisfaction of dealing with a *specialist* in fire hose!

All plies of Eureka Multiple-Woven Hose are woven *and interwoven* simultaneously, leaving no space between plies for collection of water, dirt or mildew.

"For greater protection to life and property"

EUREKA FIRE HOSE

Since 1875, Specialists in Manufacturing Circular-Woven Cotton Rubber-Lined Fire Hose

1 Market Street • Passaic, New Jersey

Division of United States Rubber

MIDWESTERN

Safety Clothing for Firemen

The Original STRIPED SAFETY COAT

. . . was introduced 17 years ago and has been a leader ever since its introduction. There have been many imitations and substitutes offered but the ORIGINAL with the YELLOW stripes rubberized into the black rubber has stood the test against the makeshift models where the stripes are glued, sewed or painted on the material.

Protection, Comfort and Service are built into every detail of this coat. Many lives have been saved and accidents avoided in departments where the ORIGINAL MIDWESTERN SAFETY COAT is specified as standard equipment.

COLLAR — Close fitting around neck, up or down. Keeps out water and sparks. Rubberized outside, corduroy inside, cemented firmly so water can't lodge between. Adjustable strap fastener.

BODY — Only 2 pieces — one middle back seam.

SLEEVES — New style with vertical seams. Originated and designed by Midwestern for use in fire garments. Easy to get into fast. Won't tear out when carrying hose or other equipment on shoulder. Flexible, elastic inner sleeve for wrist.

STORM FLAP — 6-inch flap on front of coat keeps out cold and water.

SNAPS — 5 new Midwestern safety snaps.

SEAMS — All double stitched and cemented with layer of rubber cement. No water can penetrate through needle holes. Reinforced with rivets in all places subject to extra strain.

POCKETS — One extra large inside pocket, regular.

COMBINATION SAFETY SUIT

The Midwestern Rubberized Coat and Bunker Pants make it easy for firemen to keep both warm and dry even in the most severe weather. Close fitting collar and elastic inner sleeve keep out sparks and water. Detachable wool lining. Pants have double-stitched seams, reinforcing rivets at points of strain, large roomy pocket space.

See your MIDWESTERN dealer or WRITE for Free Catalog and fabric samples

NONE GENUINE WITHOUT THIS TRADE

MIDWESTERN SAFETY MFG. CO., Mackinaw, Ill.
Located in the heart of the Greater Peoria Manufacturing Area
Manufacturers of the Famous MACKINAW Safety Coat

WHAT'S NEW

Among the Manufacturers

- products
- processes
- personalities

New Replaceable-Cell Heavy-Duty Storage Battery

A replaceable-cell storage battery designed especially for service in vehicles with two-way communication systems and other heavy load electrical accessories requiring instantly available power is now being produced by the Scranton Cellomatic Battery Corporation, Archbald, Pa.

Since individual cells can be replaced, according to the manufacturer, the replacement of a complete battery is unnecessary. This feature also allows several different voltages to be drawn from one installation.

Each cell is air-cooled, to lengthen cell life, reduce water evaporation and permit extremely high charge and discharge rates with safety.

The cells are made of electrically neutral Koppers "800" Polystyrene, which resists acid seepage, preventing corrosion of the battery rack.

The manufacturer points out that the low-resistance Selenium-plated grids allow faster charge and discharge rates. Because of this, smaller sized batteries perform satisfactorily even under difficult load conditions. In the truck illustrated, two 12-volt replaceable-cell batteries can be installed in the space formerly occupied by two 6-volt batteries. This would make 24 volts available for floodlights or other accessories using 24 volts, or provide a very heavy 12-volt system.

Blackinton Wins Award

Recently the Mutual Advertising Agency Network honored outstanding advertising programs. V. H. Blackinton & Co., Inc., Attleboro Falls, Mass., was presented first place, direct advertising category, in national competition with over 100 other entries.

Accepting on behalf of Blackinton was Lyons Advertising of North Attleboro, who, in turn, presented the award to Joseph Ferland, Blackinton's Badge Division sales manager.

Ward LaFrance Expands

Completion of a broad reorganization program involving creation of six new divisions was announced by the new management of Ward LaFrance Truck Corp., Inc., Elmira, N. Y.

John R. Stone, vice president—operations, said the reorganization move places the company in a much stronger competitive position and will be followed by an intensive drive for new business.

The principal objective in establishing the new divisions is to permit merchandising separately the various products which Ward LaFrance has manufactured for many years. The divisions include: Fire Apparatus Division, Motor Truck Division, Utility Equipment Division, Government Sales Division, Custom Body Division, and a newly created Cargo Container Division.

Establishment of these separate divisions also paves the way for the company to broaden its product line, Mr. Stone said, adding that announcement will be forthcoming soon of new products to be offered by the company.

Ansul Fire Schools Set

The Ansul Chemical Company, Marinette, Wis., has announced the schedule for its 1959 Fire School season. Thirteen sessions have been planned at the Test Station in Marinette, running from May 18 through September 30.

Employees of Ansul customers are eligible to attend a two-and-a-half-day session without charge except for living expenses. Trainees will be instructed in the use of hand, wheeled and large-capacity extinguishing equipment with actual fire fighting practice. Group discussions and training films round out the curriculum.

Fire equipment users who wish to send representatives to one of the sessions should contact an Ansul regional office located in Paoli, Pa.; Milwaukee, Wis.; Cleveland, Ohio; Kansas City, Mo.; or Burlingame, Calif.

GMC Scientist Honored

Dr. John Lander, director of electrochemical research, Delco-Remy Division, General Motors Corporation, Anderson, Ind., was recently named by the Electrochemical Society as the first winner of its research award in the field of battery research. Dr. Landers was presented the award in Ottawa, Canada, at the fall meeting of the society which was attended by scientists and engineers of 35 countries.

New Fire-Retardant Paint Tested at Otis Air Force Base

A new fire-retardant paint was tested under fire conditions at Otis Air Force Base, Falmouth, Mass., on January 15. The purpose of the test was to evaluate its effectiveness in preventing flame spread and heat transmission by insulation, minimizing heat and flame attack, and retarding and localizing the source of fire. It was also intended to compare the extent of damage under identical conditions to that of an unpainted building after 30 minutes of fire exposure.

The United States Testing Company, Inc., Hoboken, N. J., conducted the test, using two abandoned 46 by 25-foot barracks at Otis. The interior walls of the fire room in one building were coated with Saf-303, a resin-base, flat, interior paint manufactured by the Baltimore Paint and Chemical Corp., Baltimore, Md., and distributed by the Alim Corporation, New York City.

An identical fire load was placed in the fire room of each building. It consisted of an oak desk, a chest of drawers, a table, wooden chairs and cartons of files, papers of which were scattered throughout the drawers of the desk. Approximately 70 pounds of newspapers were stacked in a box and about 50 books of various thicknesses were placed on top of the desk and chest. Also included were a paper tablecloth and plastic drapes on the windows.

Thermocouples were placed in each building and eight ounces of kerosene

After 30 minutes, unpainted building was completely involved whereas painted barracks was intact. When this photo was taken, fire had been extinguished in painted building, but Otis Fire Chief Cahoon decided unpainted building was beyond saving and let it burn down

AKRON BRASS
FIRE FIGHTING EQUIPMENT

FINEST NOZZLE EVER MADE...

NEW IMPERIAL PISTOL GRIP

Compact 1" Booster Nozzle— with Akron Super Strainer especially designed for dirty water use. Chrome-plated. Style PS-708....$90

TURNS EASILY AT ANY PRESSURE

CONSTANT GALLONAGE — GPM is always the same, no matter what the setting. Straight stream, narrow or wide fog — all the same gallonage. There's no fluctuating pump pressure, no varying back pressure.

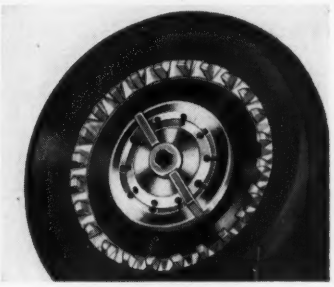
BEST FOG and STRAIGHT STREAM of any fog nozzle. Impinging high-velocity center cone jets give a solid, far reaching fog. Full gallonage straight stream reaches farther with water gallonage at full rated capacity of the nozzle.

COMPACT, LIGHTWEIGHT, EASIER TO USE!

at 100 P.S.I. Nozzle Pressure

Style	Size	GPM	List Price	
			PB	CP
710-R*	1"	23	77.65	82.05
715	1½"	95-60	84.55	88.95
715-R	1½"	95-60	84.55	88.95
725	2½"	240-120	106.85	112.35
725-R	2½" for dir. con.	240-120	106.85	112.35
729	2½" for P.P.**	240-120	91.65	99.15
729-R	2½" for P.P.	240-120	91.65	99.15
749	2½" with P.P.	240-120	116.75	130.50
749-R	2½" with P.P.	240-120	116.75	130.50

*Rigid Base **Play Pipe



DUAL GALLONAGE

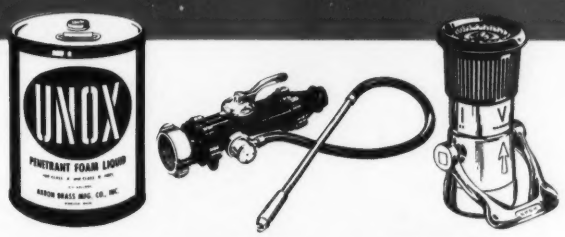
Choice of two water rates from one nozzle — depress and ¼ turn baffle in either direction to get lower gallonage — another ¼ turn and you return to full gallonage.

IMPERIAL

WATER LUBRICATED — Works easily at all pressures, *never* needs grease. Efficient ball shut-off is water lubricated.

SMALLER, LIGHTER, TOUGHER — The materials used in the IMPERIAL have been carefully engineered to reduce weight and size without sacrifice of strength or capacity. The result — one lighter, tougher, easier-to-use nozzle.

FOG–FOAM–WET WATER — First nozzle engineered with matching eductors for production of foam, wet water or fog in all degrees of pattern and straight stream . . . all without changing nozzles or shutting down. Produces foam or wet water at all settings.



UNOX® + AKRON EDUCTOR + IMPERIAL NOZZLE

MODERNIZE WITH FOAM — GET THIS AKRON TEAM

For tougher, quick-acting foam or wet water. 1,000 gallons of water will produce up to 10,000 gallons of fire-fighting foam with UNOX®. Akron nozzles and Akron eductors are perfectly matched.

Akron Brass Mfg. Company, Inc., Wooster, Ohio

were poured over the cartons of paper. Base Fire Chief George S. Cahoon and his deputy simultaneously ignited the fires in both buildings which were then closed tightly to prevent draft.

The measured heat in the unpainted building rose steadily until at the end of 30 minutes a temperature of 1550° F. was registered. The highest temperature recorded in the painted barracks was 400° F. one minute after ignition and directly above the papers where the fire was started. After two minutes the temperature dropped to 150°F. It later rose, as the fire spread to an adjacent chair and into the lower drawers of the chest and desk, to a maximum of 345°. At the end of 30 minutes, the highest temperature in the painted barracks was 160° F. directly over the source of the fire and at a partition wall. Elsewhere in the painted building, temperatures of 75, 63 and 66°F were recorded. At the end of 30 minutes, the unpainted building was completely involved, whereas the fire had not spread beyond the fire room in the painted barracks.

According to Dr. Leroy W. Shuger, vice president in charge of research, Baltimore Paint and Chemical Corp., the reaction that occurs when heat is applied to surfaces coated with this product is both chemical and mechanical. When the paint film is heated by fire, it decomposes into a semi-liquid mass. Gases inside the mass expand so that it bubbles and foams. The paint film which was originally a few thousandths of an inch thick, swells to a black sponge sometimes over an inch thick and resembles a foamed plastic. It is claimed it does not burn and is an excellent heat insulator. The spongy mass keeps the fire away from wood underneath and, in addition, retards the spread of flame along the surface.

In tests conducted last December, Underwriters' Laboratories gave this product a flame-spread classification of 10 and 15.

Portable Warning Light

A new, compact, portable warning light has been introduced by the North American Signal Company, 220 South State Street, Chicago 4, Ill. Named the "Junior Action-Lite," it is designed for fire, police, ambulances, civil defense and other purposes. Equipped with a 100-candle power bulb and a continuous duty motor, it revolves 360 degrees and flashes 90 times a minute.

British-Built Industrial Unit for Canada

The first fire engine of its type to arrive in North America, this Land-Rover Series II, 109-inch wheelbase with four-wheel drive is tested under extreme conditions. Purchased by the British American Oil Company Ltd., it will be used at the new Port Moody, B. C., refinery.

Built by Fire Armour Ltd., and distributed by Apex Fire Protection Limited, Toronto, it is fitted with a Coventry Climax 450-gpm pump and a built-in foam proportioning system. Emergency lights are supplied by a Leece-Neville alternator and the unit is radio-equipped.

Ball-Type Extinguisher

Ansul Chemical Company, Marinette, Wis., has introduced a new 2½-pound dry chemical fire extinguisher, the "Monitor," which features a spherical design. After use, the disposable "ball" is thrown away and a new UL-labeled sealed cartridge installed. The lightweight unit is designed to replace toxic vaporizing liquid extinguishers.

Compressed Gas Association Elects

Claude E. Monlux, Linde Co., a division of Union Carbide Corp., was elected president of the Compressed Gas Association, Inc., at its 46th annual meeting. Other officers elected include George C. Cusack, Pure Carbonic Co., division, Air Reduction Co., Inc., first vice president; D. M. Horner, Harrisburg Steel Co., division of Harsco Corp., second vice president. Franklin R. Fetherston was re-elected secretary-treasurer.

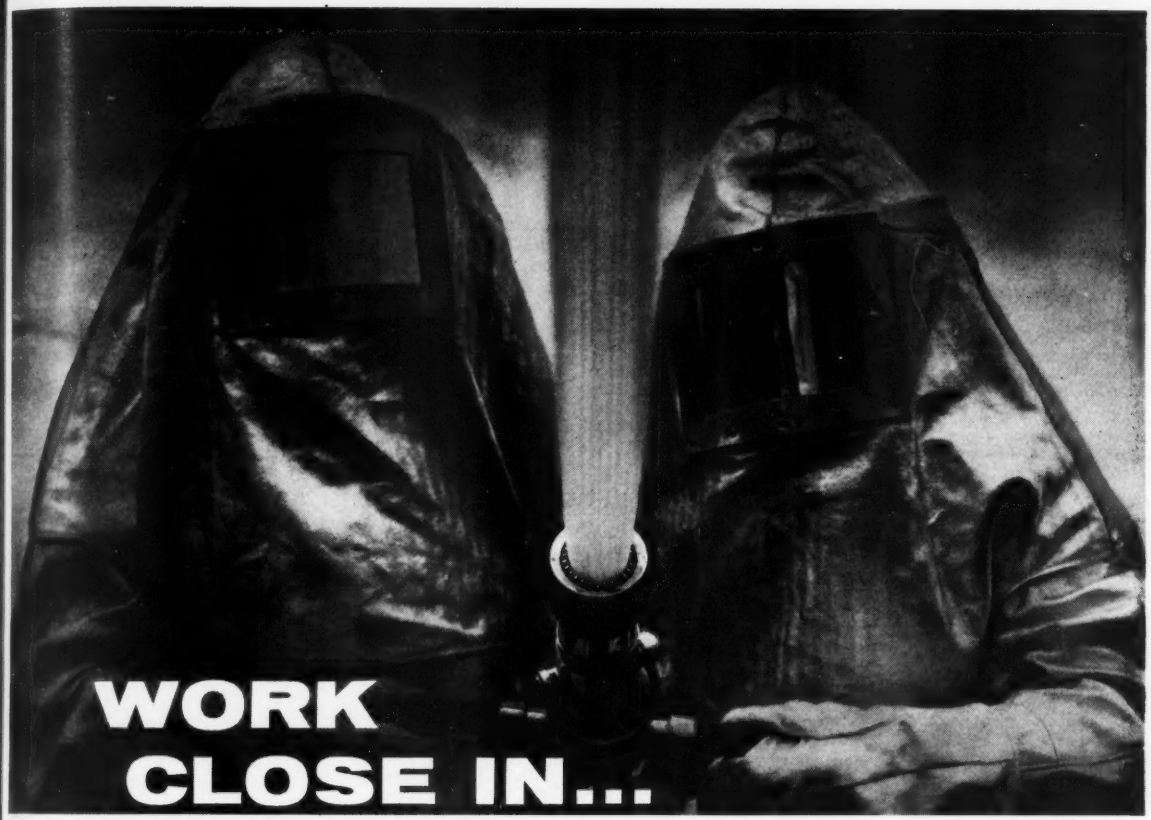
New IHC Rear Axle

Introduction of three new two-speed, double reduction type, rear axles for heavy-duty International trucks has been announced by the motor truck division of International Harvester Company, 180 North Michigan Avenue, Chicago, Ill.

These axles, rated from 18,500 to 23,000 pounds capacity, were developed in response to the requests of heavy-duty truck users. They are available for Model A-184 and AC-1890 and 190, 200 and 220 Series. All are suitable for highway or off-highway operation.

Du Pont's New Insulation

A half-inch block of fibrous potassium titanate protects hand of Du Pont research chemist, Dr. Kenneth L. Berry, from temperature exceeding 2,000° F. Composed of small fibers which block heat penetration by scattering infrared rays, the still experimental product is described as about twice as effective on a



WORK CLOSE IN... SAFELY!

Equipment made of New Fabric Reflects 90% of Radiant Heat

How fast could you knock out a fire if you could move in really close . . . and stay there? Look at these men—they're in close and holding their ground. They're protected by equipment made of 3M Aluminized Fabric that bounces off intense heat.

An entirely new concept in heat protection is offered by flexible, long-wearing 3M Aluminized Fabric that reflects 90% of radiant heat. And it's 50% lighter than ordinary materials that only insulate against radiant heat.

Complete 3M Aluminized Fabric suits offer protection against 2000° F exposures to permit fire fighting and rescue operations never before possible under such conditions. Crash crews are able to penetrate the intense heat of burning aircraft for rescue work—*proof* of 3M Aluminized Fabric's reflective-protective qualities!

For safety's sake, see—test this amazing new material that is specified by military departments, used by modern city and industrial fire departments and rescue squads.

3M Aluminized Fabric is available in hoods, gloves, coats, full suits and salvage covers. Send coupon for free booklet "When It Takes More Than Courage".

3M BRAND ALUMINIZED FABRIC

Minnesota Mining and Manufacturing Co., Bldg. 42-5W, Room 514, St. Paul 6, Minnesota

Please send me booklet, "When It Takes More Than Courage".

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volume basis as any known insulating material in the 1,300° to 2,100° F. range. A research program on new fibers of inorganic materials led to its development.

The process for converting potassium titanate into fibrous form for the first time may prove suitable for many heat insulating problems where space and weight are critical. It may also be possible to fabricate protective clothing for fire fighting using this product.

Appointments and Promotions

Frederick S. Buckley has been named manager of marketing, Industrial & Marine Division, Walter Kidde & Company, Inc., Belleville, N. J.

Mr. Buckley joined Kidde in 1946 and served as district manager of the company's West Coast operation with headquarters at Los Angeles. He was previously associated with the Western Fire Protection Company at Los Angeles.

Timothy J. O'Shea has been appointed sales manager of the Stephenson Corporation, Red Bank, N. J. Formerly assistant sales manager, he will be responsible for the sales of resuscitators, controlled

respiration units and other life saving instruments. A sales and management graduate of New York University, with technical studies at Stevens Institute of Technology, Mr. O'Shea brings to his new position 10 years of previous experience in sales managerial capacities.

Harold C. Green has been appointed industrial sales engineer for New York City by The Gamewell Company, according to an announcement by W. Ben Flanigin, general sales manager. He was formerly a sales engineer for the Acme Fire Alarm Co. and the Auth and Faraday Electric Companies.

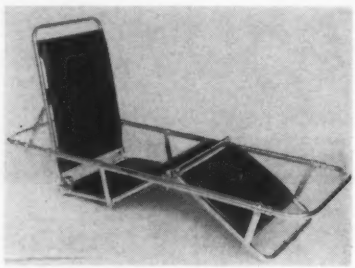
C. R. Conklin of Philadelphia, Pa., has been promoted to assistant general sales manager, Republic Rubber Division, Lee Rubber & Tire Corporation, Youngstown, Ohio. He will assume the duties formerly handled by J. M. Hughes who has resigned.

Donald L. Reid of Los Angeles has been appointed to the newly created post of mechanical goods division regional sales manager, West Coast branches, by United States Rubber Co. He will direct sales activities in 11 western states.

Gene Wheeler has been appointed sales representative for portable compressors manufactured by the Cornelius Co., Minneapolis 12, Minn. He will assume direction of the sales program in the fire department, industrial and sports fields.

Ferno Stretch'R-Chair

The Ferno Manufacturing Company, Greenfield, Ohio, has announced the Stretch'R-Chair, a new eight-position lightweight emergency cot.



Constructed of aluminum tubing and leatherette-covered plastifoam, it is designed for maneuvering through narrow corridors and up steep stairways. It weighs 30 pounds, has an adjustable chair-back for heart patients, and folds flat for compact storage.

New Kidde Extinguishers

Two new pressurized dry chemical portable fire extinguishers in 2½ and 5-pound capacities have been announced by Walter Kidde & Company, Inc., 675 Main Street, Belleville 9, N. J. The design is said to stress simplified, self-evident operation for anyone picking up a unit in a fire emergency.

They are approved by Underwriters' Laboratories, Factory Mutual and U. S. Coast Guard with a rating of 4-B:C and 8-B:C respectively.

Dietz Heavy Duty Flasher

A new heavy-duty safety flasher for warning lights or turn signals is now being manufactured by R. E. Dietz Company, Syracuse, N. Y.

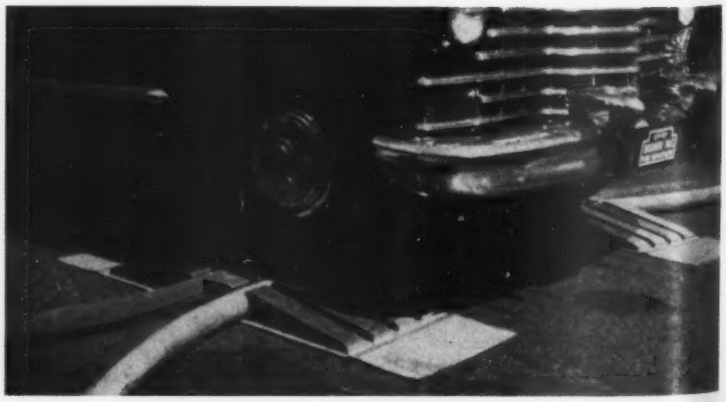
It is said to flash from one to four 21-candlepower bulbs singly or in unison without delay or warm-up.

According to Dietz engineers, the operating mechanism is suspended in rubber and hermetically sealed and is unaffected by oil, vapor, water or dust. In the event of failure the warning lights remain on. Six and 12-volt models are available.

Bell Tower Flexible Double-Line Hose Bridges

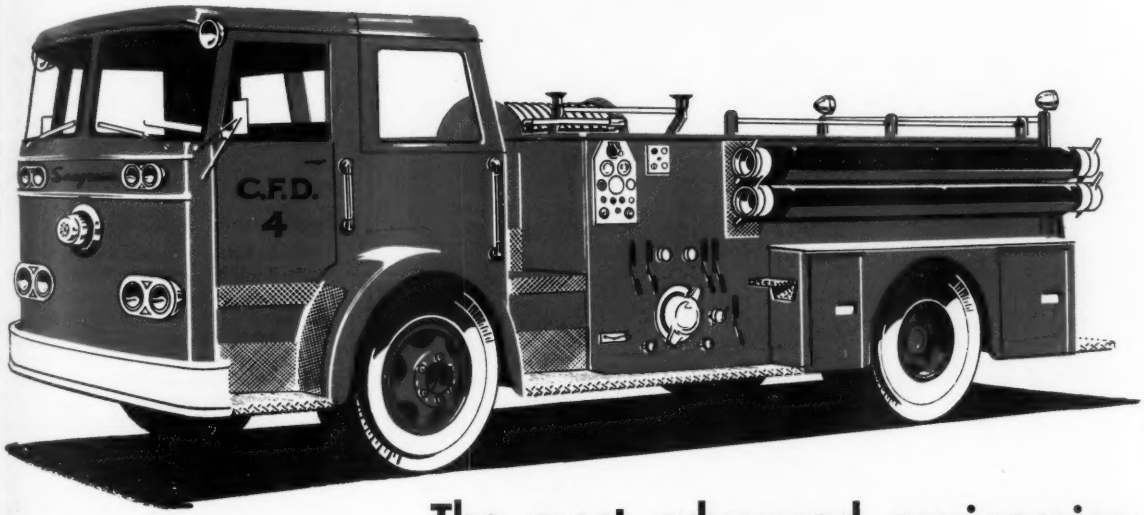
Bell Tower Products Co., 46 Barrett Avenue, Worcester, Mass., is marketing a hose bridge made of hardwood sections mounted on heavy woven belting. It is said one man can easily place them in position or fold up quickly after use. Each bridge will protect two lengths of hose up to 3-inch outside diameter and will accept trucks with dual wheels.

Please turn page



ALL THE FAMOUS SEAGRAVE QUALITY IN

The NEW SEAGRAVE Cab-forward*



*Cab-forward is an addition to the Seagrave line of quality fire apparatus. We continue the manufacture of conventional engine-ahead-of-cab models.

The most advanced engineering in the Fire Apparatus Industry!

The result is a Cab-forward with a long list of features "BEST IN THE INDUSTRY":

1. Short Overall Length.
2. Short Turning Clearance.
3. Short Front Overhang.
4. High Angle of Approach.
5. Most Standard Compartment Space.
6. Split-casing Bronze Pump.
7. Most Hose Body Space (Without extensions)
8. Adjustable Spring Shackles for Perfect "Level Ride".
9. Best Driver Visibility, Roomy Cab, Full View Instrument Panels and Controls.
10. Best Load Distribution.
11. Easiest Handling & Operating.
12. Long, Low-frequency Springs.
13. Z Type Frame for improved stability and easier maintenance.
14. Full range of Seagrave Engines, Pumping Capacities and Manual & Automatic Transmissions.

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Columbus 7, Ohio

KING-SEAGRAVE LTD., Woodstock, Ont.

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☐ SEAGRAVE PUMPING ENGINES ☐ SEAGRAVE AERIAL LADDERS

☐ _____
(Use the above line for any additional information you desire about Seagrave Fire Apparatus)

Name _____

Address _____

City _____ State _____

Title _____ FE-3-59

SEAGRAVE—*The Greatest Name In Fire Apparatus!*

EMERSON Resuscitators

Twin-Yoke "Fetherweight"

Here is Emerson protection that can go in the Chief's car or any other vehicle. Most compact of all . . . only 25½ x 9½ x 6½ inches . . . the Twin-Yoke "Fetherweight" is light to carry and quick to get into action. It is ideal for the first man on the scene . . . and permits protection on more than one side of the fire.

The single "D" tank will give better than 20 minutes of resuscitation using a pure-oxygen mechanism, or 40 minutes with an air-mixing type. For long cases a second "D" or "E" tank can be fitted in the yoke (nose to nose) or a large tank can be used, if a flexible connector is provided.

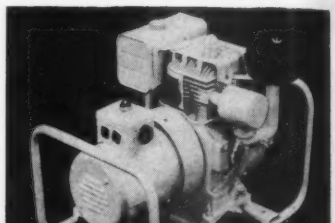
And the price is right — $245, f. o. b. Cambridge (less tank and connector)

See your Emerson representative or write:

J. H. EMERSON CO.
CAMBRIDGE 40, MASSACHUSETTS, U. S. A.

Continued from page 218

High-Output Generator



A new model electric generator has been released by the Pioneer Gen-E-Motor Corp., 5841-49 West Dickens Avenue, Chicago 39, Ill. Rated at 2,500 watts and weighing 157 pounds, model M-2500-P is said to be ideal where portability plus high output are required. The unit features recoil starting, duplex and twistlock receptacles, pilot light and a sturdy carrying frame.

Publications Available

Mine Safety Appliances Co., 201 North Braddock Avenue, Pittsburgh, Pa., has published a new, two-color bulletin No. 0602-3, describing two types of lightweight hoods designed for cold weather protection. Available in three sizes, the waterproof hoods attach quickly to the suspension cradle of MSA helmets and provide for head and ear protection or head, ear and full neck protection.

The Fyr-Fyter Co., 221 Crane Street, Dayton 1, Ohio, has issued a new 92-page Accessory Products Catalog No. 3. Said to be the largest and most completely illustrated catalog published to date, it fully describes the company's line of brass goods, hose and other fire department equipment and supplies.

K-S Marine Products, Inc., Oakville, Conn., describes its line of battery-powered, portable and fixed emergency lighting in a new catalog, No. 100. Included are sealed-beam spotlights, searchlights, dual-beam search and floodlights, car and truck beacons, reflectors and highway warning flares.

Motorola Communications and Electronics, Inc., 4501 West Augusta Boulevard, Chicago 51, Ill., has announced the 1959 edition of its Communications Buyer's Guide. Considerably enlarged from previous issues it is a profusely illustrated catalog of two-way communications equipment and accessories. Write for copy on department letterhead.

The Autocall Company, Shelby, Ohio, has published a folder on its Type SA Fire Alarm System for Schools. An important advantage of the system, according to Autocall, is the double supervision feature. The folder also covers fire alarm boxes, alarm bells and horns. □□

Among the Buffs

By Paul C. Ditzel

THE ALARM BOARDS in Washington, D. C., had been quiet for going on a month. Something was sure to pop, and soon, too, what with the cold temperatures. Pop it did shortly after one o'clock on the frosty morning of January 23, 1959. Bells rang, sirens shrieked, apparatus bolted from stations and fire buffs leaped from under their electric blankets. What was it? A two-alarmer? No, worse than that. A five-bagger? No! Well, then, what in tarnation was all the fuss about?

Lester H. Steinem, honorary fire chief of the Washington, D. C., Fire Department, and founder and chief of the Friendship Fire Association, was locked in the Colorado Building and couldn't get out!

Buff Steinem, until that night, had always been on the outside looking in at rescues and fires. That night, however, Steinem was on the inside looking out as an entire battalion of firemen and cheering—or jeering?—buffs plotted how best to rescue the chief with a minimum loss of his dignity. A squad car screeched up to the scene. They had no suggestions. Steinem wasn't surprised.

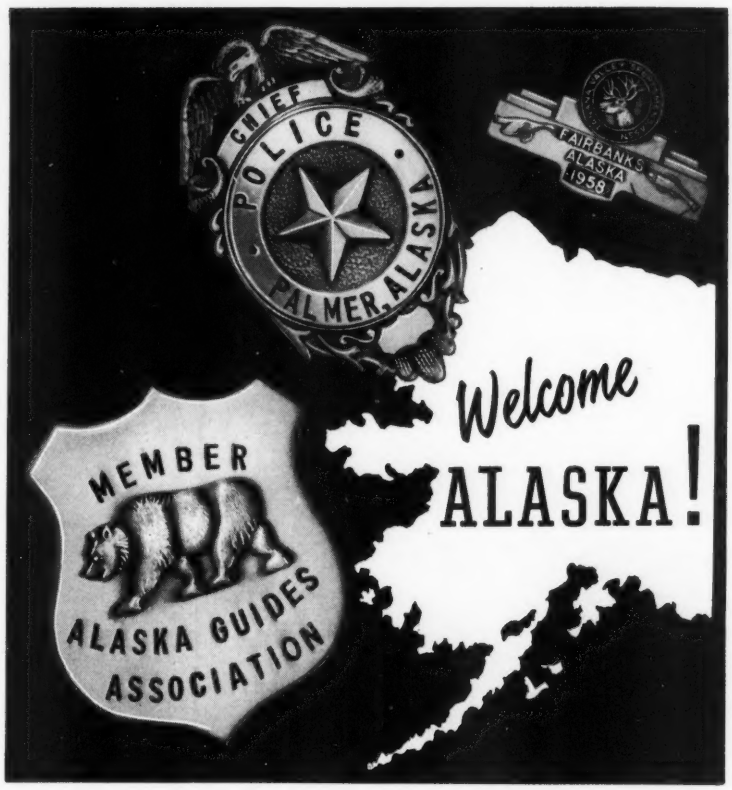
When he discovered he was locked inside along with four companions, he tried to attract a beat patrolman across the street by whistling through the crack of the front door. It was like whistling in the dark. Washington's finest couldn't hear him. This was plainly a job for the stalwarts of Rescue Squad 1 and whatever other pieces of heavy duty apparatus happened to be available in downtown Washington. (Are you listening, Patty McDonald?)

Fifty-six minutes after the arrival of the first apparatus (and five before Buff Steinem called the FBI), the firemen figured out a way to spring him. They broke the lock on a door leading to an elevator which serves a Hot Shoppe kitchen in the basement. Steinem was safe and sound. But his ears have been ringing ever since, especially since he's the dignified vice president of a local trust company.

"We were tickled to death to do it for the chief," said Captain Willard Maier of Rescue Squad 1, with all the solemnity befitting such duty, "especially when it entails hiking out in what my wife calls 'the wee hours'. Chief Steinem's been helping firemen ever since I can remember," added the captain.

Some months—or was it years ago—this column started something akin to the current debate on hose pungs when it mentioned that some unorthodox departments go in for unusual color schemes for their apparatus: orange, white, purple people eater, and what not.

Now comes Buff Bill O'Meara—and who better else should it be—to report that in a Butte, Mont., suburb where an influential segment of the population is of Irish descent, there is a spanking new Kelly green fire engine. Now if Irving "Doc" Levin of the San Francisco



BLACKINTON....

OLDEST NAME IN THE BADGE FIELD

SALUTES ALASKA

NEWEST STAR ON THE FIELD OF "OLD GLORY"!

"Most complete in the 49 STATES". . . . That's what more and more badge buyers say when they see the complete Blackinton line.

Expert Blackinton craftsmanship . . . producing exclusive designs handsomely executed in brilliant long-lasting finishes . . . creates outstanding badges Blackinton is proud to produce, and you will be proud to wear.

For details of the entire Blackinton badge line contact your badge dealer or uniform supplier, or write to us for his name and address.

Alaskan dealerships available — For further information write to:

V. H. BLACKINTON & CO., INC. • ATTLEBORO FALLS, MASSACHUSETTS

Get smoke out, get air in

with Multi-Purpose

SUPER VAC

CONTROLLED VENTILATION UNITS

NOT JUST A FAN ... but a powerful vacuum-action air screw ... Super Vac is amazingly simple in operation, made possible by the efficient design of the **powerful propeller** that is the heart of the unit. This patented propeller produces 100% pulling or blowing power over its entire surface.

Proved method of saving lives while also reducing smoke damage

Fire departments **nation-wide** attest to the speed with which Super Vac provides **controlled ventilation** ... so necessary in modern fire fighting. This multi-purpose unit primarily (1) gets rid of smoke and fumes through its powerful vacuum action ... or, (2) furnishes a tremendous blast of fresh air into the smoke-congested area, reducing the dangers of combustion and asphyxiation. Although one unit is often sufficient, **complete controlled ventilation** can be more speedily accomplished by using two or more units ... one or more units **pulling out the smoke and fumes** while the remaining units **blow in a steady supply of fresh air.**

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Phoenicians had sent that one in, I *would* have quite a story.

William Snyder, formerly of the Baltimore Salvage Corps, would like to trade modern or historical pictures of fire equipment for shots of some insurance patrols over the United States. He says he has negatives from Baltimore, Philadelphia, New Jersey, New York, and Delaware, Virginia, among other points east and west. Bill's address is 5400 Harford (cq) Road, Baltimore 14, Md.

Mention of Baltimore reminds us that Commissioner James N. Smith reports his SHC Association will be featured in the March issue of *Ebony Magazine*. As far as is known, the SHC Association, Inc., is the only all-Negro fire buffs club in the nation. Naturally, Smokestack Hardy's familiar face will appear in the photos accompanying the text.

Speaking of magazine articles, here's a tip on two that should interest you collectors of fire memorabilia as well as the many fire chiefs who read this column.

Editor Phil Hirsch of *Man's Magazine* and *Challenge* says that his May issues of each publication will carry fire stories of interest to buffs and chiefs. *Man's Magazine* will contain a story of the Our Lady of the Angels school disaster. The article will be an interesting addition to the excellent report in FIRE ENGINEERING by Commissioner Bob Quinn of the Chicago Fire Department.

Challenge Magazine for May will run a thriller by Van Hetherly on an offshore oil rig fire-disaster in the Gulf of Mexico. Editor Phil shows signs of becoming—if he's not already—a fire buff as his two monthly adventure magazines regularly carry stories of interest to fire chiefs and buffs.

Fire Buff Pierre Rabbitte of Brussels, Belgium, founder of the Association Boite Quatre-Vingt-Dix-Huit, a group of Brussels buffs formed after the catastrophic delft blaze in 1917 when Box 98 was pulled, says fire fans there witnessed a unique rescue operation when flames swept Brussels International Airport. Two persons trapped on the roof of the blazing building were rescued by a helicopter which landed despite billowing smoke and spouting flames. Buff Rabbitte, meet Buff Steinem. . . .

Until the bells go down again next month, I hope you'll continue to send along your buff club reports and such other outstanding items of significant news as those above. The address remains the same: Box 8731, Los Angeles 8, Calif. □□

New York Disbands Radiological Unit

The New York Fire Department has abolished its radiological unit. Fire Commissioner Edward F. Cavanagh, Jr., disclosed that in its place a radiological training program will be introduced covering all 227 engine companies in the city. Approximately half of the department's nearly 12,000 men will be trained.

Questions and Answers

Ladder Safety Tips

To the Editor:

What advice would you give to a recruit concerning working from a ladder?

R. B.

Answer: The following are general tips and not necessarily a complete list. They are considered good practices by most experts.

1. Climb ladder on ball of foot (not on arch) in center of rung
2. Climb at arm's length (never hug the ladder)
3. Look up while climbing
4. Do not run up or down a ladder
5. Always use a ladder belt, life belt, rope-tool or leg lock when working off ladder
6. Tie in tip of ladder if possible (sometimes called "dogging")
7. Always examine pawls ("dogs" or locks) when climbing extension ladders to be sure they are locked in

Oxygen and Fire

To the Editor:

I have heard that oxygen will not burn. If this is true, then why are safety precautions regarding fire so necessary at installations where it is used?

C. B.

Answer: Oxygen itself is nonflammable, but it is essential to combustion. The atmosphere contains about 20 per cent of this gas.

Substances which burn readily under normal conditions may react violently in atmospheres which have been enriched with oxygen. Certain materials may become explosive and others, not normally considered flammable, will burn under such conditions. Because of these considerations, safety precautions are necessary wherever oxygen is handled, stored or used. (See Handbook of Industrial Loss Protection 40-9.)

Charcoal Hazard

To the Editor:

What are the hazards of charcoal and how should it be handled?

P. D.

Answer: According to the Underwriters Laboratories, charcoal under certain conditions is susceptible to spontaneous heating and ignition. This is especially true when newly made and exposed to air, or when wet. It is hazardous when freshly ground and tightly packed.

When burning, a life hazard is present due to carbon monoxide poisoning unless adequate ventilation is provided.

Fire extinguishment is accomplished with water. When complete, the storage pile should be moved. □□

THE MINUTE THAT WAS FOREVER FOR THE FACE AT THE WINDOW

The ladderman had a brief glimpse of a terror-stricken face at the window. Just as he reached it, the floor collapsed and the face disappeared.

But it wasn't that final minute which decided the fate of the face in the window—it was one of the seven minutes it took to pull the hose off the pumper and get water on the fire.

Bi-Lateral flips off the pumper faster because it's more flexible, and because it folds flatter. Bi-Lateral construction allows *more* hose on each pumper—enabling you to cover more fire, faster. Save time—save lives—with Bi-Lateral.

Bi-Lateral construction saves you *more* than precious minutes, because the same flat-folding feature is responsible for the protection of the lining. This means you replace it far less often—*you save precious dollars, too!* Bi-Lateral costs less per foot per year.

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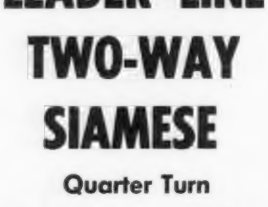

PLATE 175

Plate 175. Male outlets—¾", 1", 1¼" or 2". Female swivel inlet—1½", 2" or 2½". Pin Lug or sensible lug swivel. Rough body, painted red with polished bronze or chromium plated trim.

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World-Wide Fire News

Girl, 3, Dog, 2, Japanese Fire Heroes

Three-year-old Chieko Nakashima of Matsumoto, Japan, is Japan's newest heroine, after rescuing her year-old brother from a fire that destroyed their home.

Chieko was playing in the yard on November 22, while the baby slept inside, heated by a charcoal warmer covered by a quilt. She saw the quilt catch fire, but managed to carry the baby from the house before it went up in flames.

The children's parents were away working in the fields.

In Ueda, Japan, a two-year-old police dog with a unique nose for fires was recently honored with a service medal and new collar. Kuma, an Alsatian owned by a carpenter, Gempi Imai, was cited by the Ueda Fire Department for distinguished service. The dog, firemen said, never failed to arouse her master who is volunteer chief of the city's Fourth Fire Brigade, two or three minutes before the alarms whined from the fire hall.

Awakened by Kuma's insistent barks, Imai dashes to the fire hall and has the engine ready to go when the rest of the company arrives.

Norris T. Morton

Bomb "Joke" Brings Year in Jail

A Federal court judge in Chicago, sentenced Stanley V. Garcia, 27, to a year in jail and fined him $100 for causing a bomb scare at Chicago's Midway Airport. Garcia, a bus driver, protested that his call to United Air Lines on September 14 was "just a joke."

"I can't imagine anything more serious," Judge Philip L. Sullivan said in denying Garcia's attorney's plea for probation. "This is certainly not a probation case. This is a serious matter."

It was disclosed that Garcia's false report caused more than 200 passengers to be taken off six United Air Lines planes. According to Prosecutor Bernard Waters, six pieces of fire equipment and five police cars sped to the airport. Planes were partially dismantled and luggage searched carefully. It took the airline more than 24 hours to get back on schedule.

From the World News Ticker

Rome, Italy, police arrested 75 vendors of fireworks in a drive against illegal sale of such merchandise. Also seized were 200,000 firecrackers, Roman candles, sparklers and noise bombs . . . Crewmen from the U. S. 6th Fleet destroyer Pierce succeeded in putting out a fire which burned aboard the NATO storage tanker Marador on December 19. Two Greek crewmen aboard the tanker were killed in an explosion that preceded the fire . . . On the Isle of Wight, pris-

oners joined their guards, January 5, in forming a bucket brigade to fight a fire in the administration block of Parkhurst Prison. The building was gutted . . . The Air Force has its false alarms no less than the fire force. A report of a crashed nuclear-armed jet plane in West Texas proved a "false alarm" according to the acting commander of Webb Air Force Base, Big Spring, Tex. . . . In the crash of another U. S. plane—a jet fighter—into the English village of Kesgrave recently, one woman, an employee of a gas station, was killed but the pilot escaped death. The filling station and other structures burned in the immediate area or were wrecked. The crash renewed the British outcry against jets flying over the countryside . . . Helicopters on January 9 flew reinforcements for fire fighting teams battling a fire raging 2,000 feet up in mountains near the cape province of Ceras, South Africa. The blaze destroyed vast area of vegetation and threatened irrigation projects and water supplies . . . Flames that roared out of control for over two hours in downtown Anchorage, Alaska, January 8, destroyed a two-story hotel and various establishments in the building. Every available fire fighting unit went to work, aided by fire control teams from nearby military bases. Fire fighters took punishment in the zero weather. One Anchorage fireman, Captain Jack Houghton, suffered a cut hand. Loss was estimated upward of $200,000.

Costly Monastery Crates Lost in S. F. Fire

Big wooden crates containing parts of a Spanish monastery caught fire from an undisclosed cause on December 13 in San Francisco's Golden Gate Park.

The monastery was presented to the De Young Memorial Museum by the late publisher, William Randolph Hearst. It was taken apart in Spain and shipped to this country after each piece was numbered carefully to identify it in the reassembly.

A previous fire destroyed many of the numbers; this latest blaze may have ruined the possibility of faithful replacement. San Francisco fire fighters prevented complete destruction of the storage.

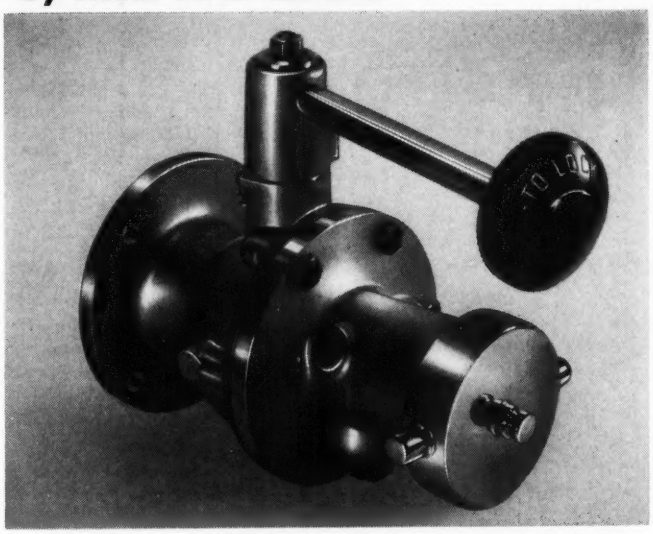
Wool Cutters "Bolt" Fire

Last December, when fire struck a clothing factory in London, it trapped three wool cutters on the fourth floor of the burning structure. Flames and smoke blocked all avenues of escape. The three cutters seized a bolt of material—jersey wool, one yard wide, tied one end to a window frame, heaved the bolt into the street, then slid down to safety on 60 feet of cloth.

The blaze reportedly did extensive damage to the Palmax Supply Company factory in the Shorditch section of London but everyone escaped. Crowds applauded the sliding cutters as they zipped down. "I always knew that was good cloth; didn't burn or tear," said Clement Cohut, one of the lucky four. □□

The HALE

Ball-Type "BL" DISCHARGE VALVE PIONEERED in '49...Still PREFERRED by Most FIRE CHIEFS!



Just 10 years ago, in January 1949, the HALE ball-type "BL" Discharge Valve was first announced to the Fire Field.

It made an instant "hit."

Fire Fighters everywhere welcomed the new Valve because of these outstanding features:

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Year by year the "BL" has maintained its popularity and has been constantly improved through continuous research and development.

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The "BL" Discharge (and Suction) Valves can be used on practically all HALE Fire Pumps *no matter how old the model.* They are now also available with undrilled flanges for use on many makes of pumps other than HALE. This offers Chiefs everywhere an opportunity to modernize older pumps at reasonable cost.

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By sending today for new "BL" Bulletin #293, you will receive full details showing the many useful arrangements available when you buy Hale "BL" Valves—and why they are *preferred by most FIRE CHIEFS.*

NOTE: HALE also makes the type "B" Discharge and Suction Valves (described in new Bulletin #369) to meet Specifications which still insist on a straight-thru, full-opening Valve.

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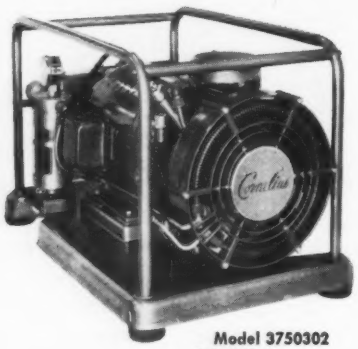

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the round table

discussion of current fire department and fire management problems

Handling Gasoline Spills

AN EMERGENCY which is becoming more common in most sections of this country is the spilling of large quantities of gasoline and other flammable liquids following tank vehicle accidents on highways and streets. In some cases, fire immediately occurs but in a great number, only the threat of fire exists when the fire department arrives on the scene.

Some departments which have experienced emergencies of this nature have developed methods of coping with gasoline spills, which are designed to minimize the immediate danger while dispersing the fluid.

Due to related problems of flammable vapor travel, sewage disposal, run-off on creeks and waterways flowing through adjacent communities, ground seepage and damage to highway surfaces, it is evident that fire chiefs who must face this problem in the future need to know the experiences of others who have handled similar situations in the past.

FIRE ENGINEERING posed the questions appearing elsewhere on this page to draw out the necessary information concerning procedures which have proven successful. The editors will welcome further comment from our readers. Address replies to Round Table Editor, FIRE ENGINEERING, 305 East 45th Street, New York 17, N. Y.

The Discussion

Leo C. Driscoll, Chief, Boston, Mass.: Our department flushes flammable liquids into sewers.

At the present time, sewage is directed to a pumping station where centrifugal pumps impart sufficient velocity to send it to settling basins, remote from the city. The gasoline is washed into catch basins by hose streams and open butts are allowed to flow in the catch basins for a period of time. Tests are made of the catch basins in the vicinity, and adjacent manholes, cellars, etc., with flammable gas indicators to determine that no gas has pocketed in the area. A call to the fire alarm office from the scene, has them alert the pumping station to expect flammable liquids. I feel quite certain that prior to the gasoline reaching this point, the vapors have become mixed with other vapors or gases commonly found in sewer lines and just becomes a part of them. There is also the possibility of these liquids becoming chilled so that vaporization is considerably reduced as the flammable liquid progresses through the sewerage system, thus reducing the hazard.

In the many years we have used this method, we have never experienced any difficulty. Whether this would hold true for other cities and towns, I do not know. I presume it would depend on the system they employ in handling sewage.

The flow does not pass through nearby communities.

We are, at present, inquiring into a product of the Penetone Co. It is supposed to be particularly desirable in breaking up oil spills and causing its emulsification with water. It is purported to be a non-flammable solvent and in reality, seems to be a wetting agent.

We would not hesitate on any spill to use foam as a protective blanket and there is a good chance that it would have some effect as it is flushed away with the gasoline spill.

George Burns, Chief, Anchorage, Alaska: Flammable liquids are flushed down storm drains, which empty into Cook Inlet, which has a 32-foot tide.

Liquids do not pass through any other community.

Wayne Ulm, Chief, Des Moines, Iowa: We flush the gasoline from the streets into the sewer.

We take precautions to prevent the possibility of fires at the sewage treatment plant by calling the plant at the time we flush the gasoline into the sewer and giving the location, so they can time it and use added precautions when it is expected at the plant.

We do not have the problem of the

THIS MONTH'S QUESTIONS

Does your method for coping with gasoline spills on highways and streets require flushing the flammable liquid into sewers?

If so, do you take precautions to prevent fire occurring at storm sewer discharges, sewage plants, etc., where gasoline may eventually collect?

If the flow of the liquid passes through nearby communities, is notification given to the proper authorities?

If flushing is not resorted to, what method is employed for disposal?

liquid flowing through nearby communities, but if we did, we would certainly notify them.

Gerald Vernotzy, Chief, Akron, Ohio: In most cases, we flush the flammable liquid into sewers.

When the flushing occurs, our sewer division is notified immediately, and their cooperation is excellent. The sewer division also takes legal action when negligence is indicated.

The proper authorities are notified when the flow of liquid passes through nearby communities.

Stand-by precautions are taken, if flushing is not done.

Frank J. Johnson, Chief, Boulder, Colo.: Flushing spilled gasoline is the only means of disposal available to us.

Sometimes it is necessary to flush it into storm sewers; other times it is possible to flush it onto areas of open ground.

Our storm sewers empty into the stream running through our town in isolated areas, where the rather small amounts encountered to date have created no great hazard.

If it is possible to flush the gasoline onto open ground, we do so. We then post a guard until it has been assimilated with the ground and dissipated in the atmosphere.

George F. Lowe, Chief, Pueblo, Colo.: We use large amounts of water to flush into sewers. If the spill is at all large, we use 2½-inch lines.

The sewage plant is notified of all flammable liquid spills that are washed into the sewers.

There are no communities close enough to cause any trouble by the flow of liquid.

E. W. Heller, Chief, Ann Arbor, Mich.: Our department flushes flammable liquids into sewers.

We call the disposal plant as a precaution against fire occurring at storm sewer discharges, etc.

The flow of liquid does not pass through any other communities.

We have never had a major spill.

M. Whisner, Captain, Newport, Ky.: The Newport Fire Department flushes flammable liquids into sewers.

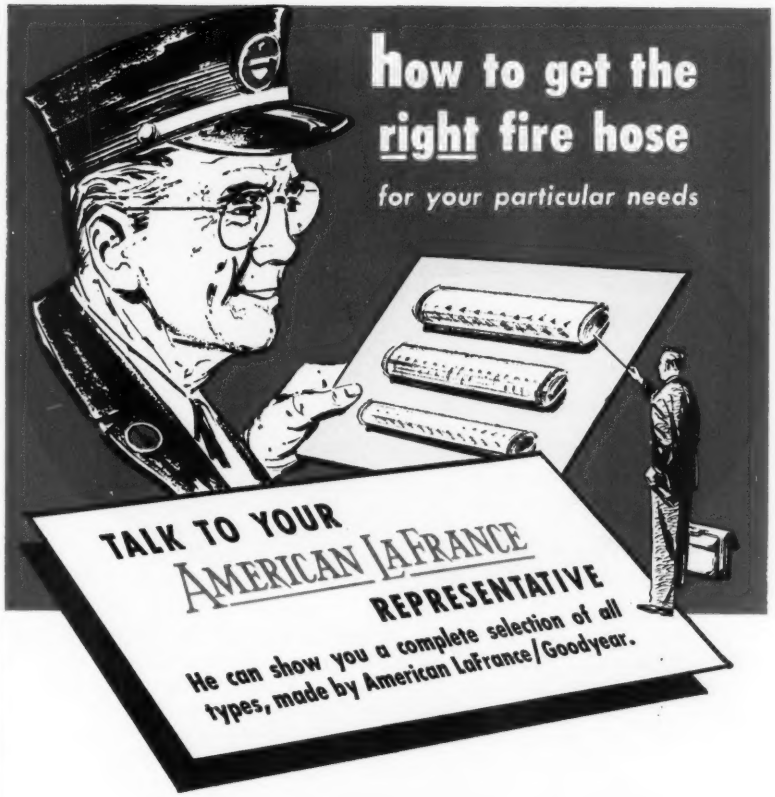
We turn on a hydrant at the nearest point to the sewer, and let the hydrant run for periods of from 15 minutes to an hour, depending upon the amount of gasoline spilled.

Our sewers empty into a sewage disposal plant and if the officer-in-charge thinks there has been sufficient gasoline spilled which may cause trouble, he in turn, notifies the man-in-charge at the disposal plant.

This method is the only one we have had to resort to.

Donald S. Charles, Chief, Charlotte, N. C.: In handling gasoline spills on local highways and streets, we flush the flammable liquids into storm drains, rather than into sewers.

We take precautions against fire occurring at storm sewer discharges, etc., by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- ☐ Foldwell
- ☐ Fendwell
- ☐ Rubber Covered
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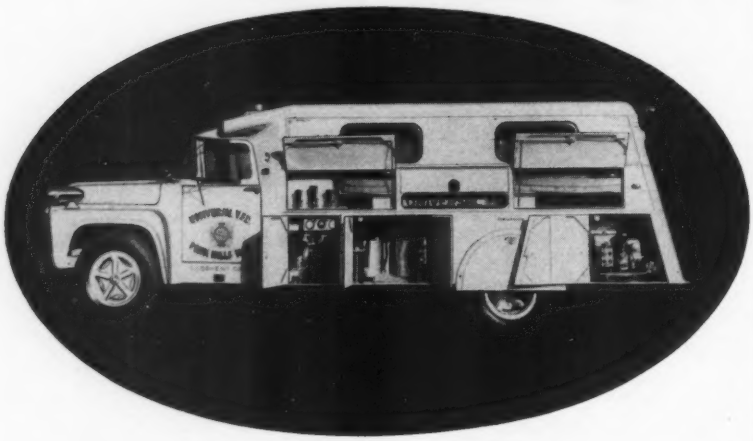

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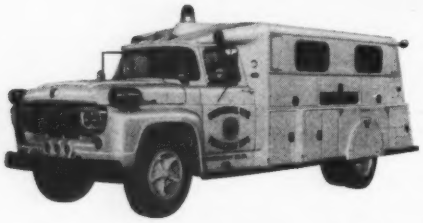

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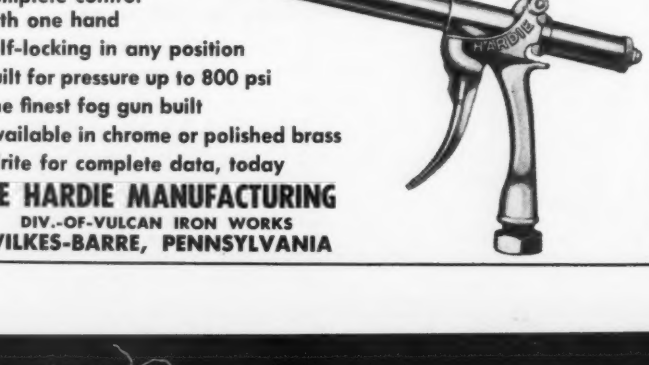

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extensive flushing at several storm drain openings and at the outlet, if possible.

The proper authorities are notified, if the flow of liquid passes through nearby communities.

W. A. Paddock, Chief, Caldwell, Idaho: We flush to storm sewers only because flushing gasoline into sanitation sewers would damage the digester at our sewage disposal plant.

The grade at the outlets of our storm sewers is such that gasoline won't collect.

We do not have the problem of liquids passing through nearby communities. If we did, we would have to notify the proper authorities.

In instances where gas spills were encountered, we used the following methods: (1) We covered with foam and set up a watchman; (2) We flushed to a natural sump and pumped into barrels; (3) We made a small sump up wind and pumped the raw gasoline into barrels.

We find that there is no universal practice applicable to all circumstances. So, we have to improvise according to the conditions found at the scene of the spill.

J. L. Evans, Chief, Savannah, Ga.: We flush the flammable liquid into sewers only if the amount of gasoline is small. This amount would be too small to cause a fire.

The flow of liquid does not pass through nearby communities.

If the amount of gasoline is large, we use sand.

Paul R. Flynn, Chief, Duluth, Minn.: On small spills, we flush the flammable liquid into sewers. On large quantities, we use foam and pump excessive amounts into gasoline tank truck, which is equipped with its own pump for that purpose. This truck is provided by gasoline and fuel oil distributors.

The flow of liquid does not pass through nearby communities.

Edward R. MacDowell, Acting Chief Engineer, Camden, N. J.: The Camden Fire Department has not had to cope with gasoline spills to any great extent. Passenger car accidents have created small gasoline leaks on the highway, which were flushed along the gutter and eventually into the sewer. The amount would be almost negligible.

With the small amount entering the sewer system, we have not had any fires occurring at storm sewer discharges. In one accident involving a tractor-trailer in which one gas tank had started to leak, five-gallon cans were used to catch the gasoline.

Our sewerage system does not pass through any other community.

We have had some experience with fuel oil spills and our highway departments, city, county and state, have been very cooperative in that they respond to our call with a load of dirt or sand. This later is gathered up and deposited at the city dump. The particular oil company involved would follow up with Dri-Sol or some other absorbent. □□

CALIFORNIA BRUSH FIRES

Continued from page 191

Torrance, head of CD Fire Area "G" in the South Bay area. Chief Benner assembled five units from El Segundo, Torrance, Gardena, Redondo, and Hawthorne, and sent them to the fire. Also, the City of Beverly Hills which lies just below the eastern flank sent two companies. Total number of units at the fire was approximately 97, 77 of which came from L. A. City. There were 12 homes damaged, only one totally, with 471 acres lost.

During the peak of the fire all dispatching of equipment by fire alarm telegraph was stopped since so many stations were empty. Equipment was dispatched by telephone.

The fire finally was stopped on the eastern flank at San Ysidro Road, a new and expensive residential area north of Beverly Hills, where a virtual army of apparatus was massed.

Fire fighting in the Beverly Glen, Benedict and San Ysidro Canyon area was helped by good water supply. L. A. Water & Power said 4,857,000 more gallons of water were used from 4:00 p.m., December 31, to 4:00 p.m., January 1, than in the previous period. □□

Phosphorus Taken From High School Laboratory

Threat of a sudden and violent chemical fire existed in Clifton, N. J., on the evening of January 12, when six phosphorus bars were stolen from a laboratory of Woodrow Wilson High School. The dangerous material was stored submerged in water in a container. If the bars had been removed or the water spilled and the contents allowed to dry, a sudden eruption of fierce flames would have resulted.

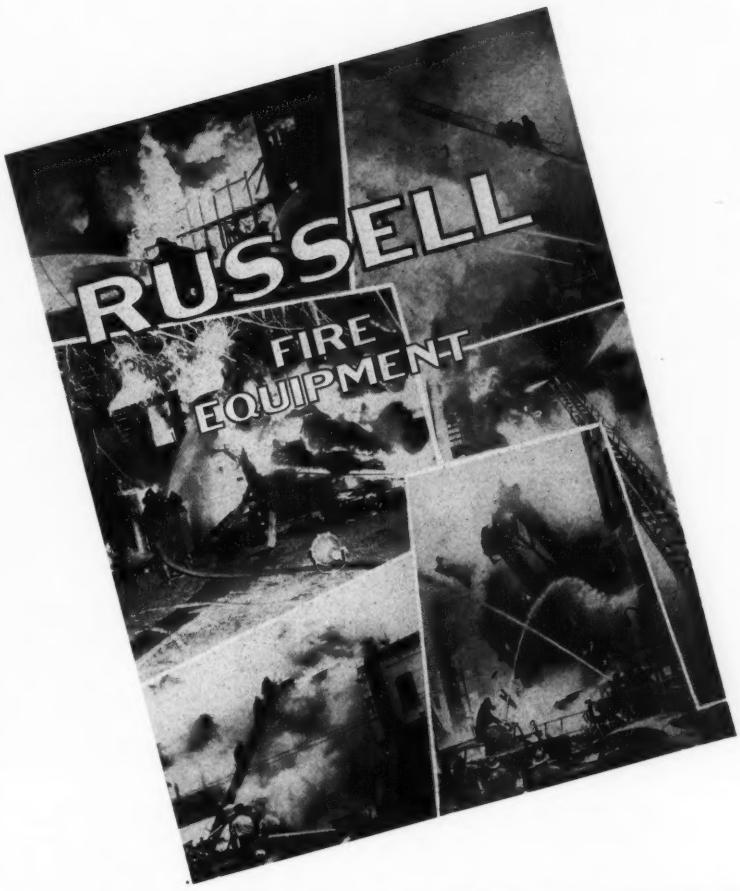
While a search of the school progressed, police cruisers with public address systems warned neighboring area residents of the serious fire hazard. The container, with the bars intact, was later found in a debris-filled classroom.

It was reported several boys had broken into the school, ransacked the room and left the hazardous container on the scene.

Sylvania Hosts Rescue Course for Firemen

The Sylvania, Ohio, Township Fire Department recently conducted an 18-hour rescue and first aid course for more than 30 northwestern Ohio and southern Michigan fire departments. Directed by Captain Henry Schwartz, the three-hour evening sessions were held over a six-week period. with more than 150 men in attendance. Cooperating with the fire department were six Toledo and Sylvania physicians, the Ohio State Police, the American Red Cross and Lucas County Coroner P. G. Hohley.

Chief E. K. Cline



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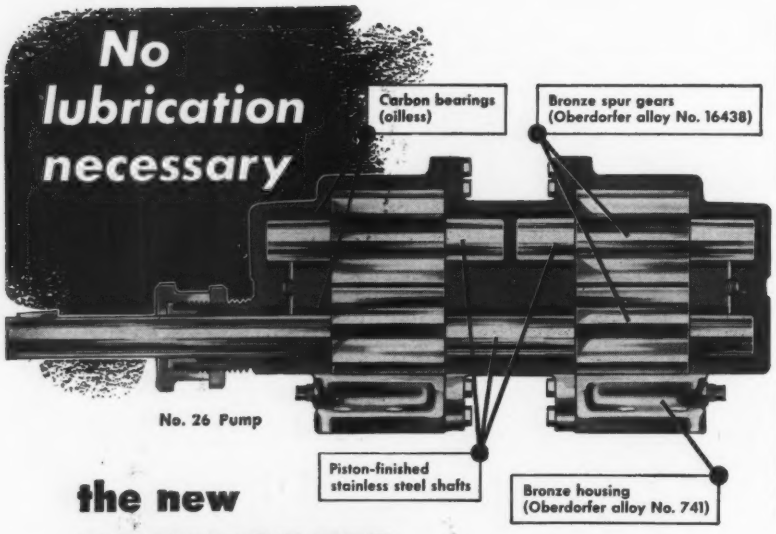

No lubrication necessary
Carbon bearings (oilless)
Bronze spur gears (Oberdorfer alloy No. 16438)
No. 26 Pump
Piston-finished stainless steel shafts
Bronze housing (Oberdorfer alloy No. 741)

the new

OBERDORFER BRONZE BOOSTER PUMPS

These booster pumps with oilless bearings will last 3 to 5 times longer than the old style equipped with plain bronze bearings. As a result of closer machining tolerances, over 20 feet of suction lift may be depended on.

The No. 13 and No. 26 Oberdorfer Pumps are more fool-proof than they have ever been. When you get to a fire you have something you can count on. It isn't necessary to wear pumps out checking them periodically to see if they will work. These pumps are metering pumps in principle and therefore must produce the same volume for every revolution of the drive shaft.

PERFORMANCE DATA—No. 26 and No. 13 PUMPS

Pump No.	Pump Shaft R.P.M.	Pounds Pressure	Hose Length and Size	Dry Suction Lift in Feet	Vol. in Gal. Per Minute
26	1600	120	500'—1½"	20'	150
13	1600	120	500'—1½"	20'	75

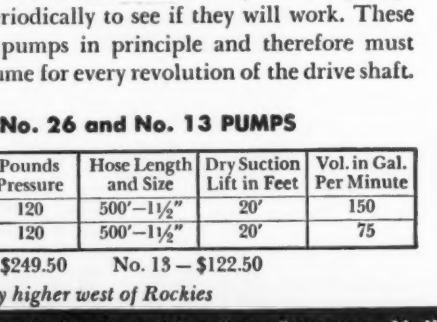
LIST PRICES — No. 26 — $249.50 No. 13 — $122.50

Slightly higher west of Rockies

FIRE PUMP DIVISION, Oberdorfer Foundries, Inc., Syracuse, N. Y.

ARE YOU PREPARED FOR FLOOD DISASTER?

"BRIDGER" LINE-THROWING GUNS have saved many lives in flood, hurricane and fire conditions. Don't wait until disaster strikes. Order your "Bridger" Life Gun now through your supplier or



Standard equipment with hundreds of fire departments, approved by U. S. Coast Guard and Civil Defense

NAVAL COMPANY
DOYLESTOWN, PENNA.

HOW PLASTICS ARE MADE

Continued from page 205

pressure. In *casting*, heat may be used or the fluid plastic may be cured at room temperature, but no pressure above normal atmospheric pressure is used. Both thermosets and thermoplastics may be cast.

In *calendering*, the semi-liquid, viscous plastic is passed between a series of rollers to form sheets or film. Calendering may also be used to apply a plastic coating to textiles or other supporting materials.

Thermosetting plastics are most generally used in *laminating*, a process in which plastics are used to hold together layers of reinforcing materials—paper, cloth, wood or glass fibers. High heat and pressures are used. Among many other uses, laminated plastics are often used for gears and aircraft propellers Luminescent laminated plastics are used for airplane instrument panels. At least one company produces a shock-resistant, laminated helmet for firemen.

In a somewhat similar process, *reinforcing*, plastic and cloth, paper or fiber glass are bonded together, but very low or no pressure is used. Reinforced plastics mostly employ thermosets though some thermoplastics are used.

Thermosets and thermoplastics may both be used as a *coating*. The materials to be coated may be metal, wood, paper, fabrics, leather, glass, concrete, ceramics, or other plastics. Methods of coating include knife or spread coating, spraying, roller coating, dipping and brushing.

The end products

Fabricating covers operations on sheet, rod, tube, sheeting, film and special shapes to make them into finished products. There are three broad categories: Machining; cutting, sewing and sealing of film and sheeting; and forming.

The *finishing* of plastics includes the different methods of adding either decorative or functional surface effects to a plastic product.

In the next article, we shall consider the hazards of the plastics industry, illustrated by actual incidents, and precautions to be taken.

SOURCES

[1]**The A B C's of Modern Plastics** (Second Revised Edition, 1958), Bakelite Company, Division of Union Carbide Corporation, New York, N. Y.

[2]**Fire Hazards of the Plastics Industry** (Revised Edition, 1955), The National Board of Fire Underwriters, 85 John Street, New York 38, N. Y.

Plastic Moulding by D. A. Dearle, Chemical Publishing Co., Inc., Brooklyn, N. Y., 1941.

Plastics, The Story of An Industry, Seventh Revised Edition, October 1957, The Society of the Plastics Industry, Inc., 250 Park Avenue, New York 17, N. Y.

Working with Plastics, Arthur Dunham, McGraw-Hill Book Co., 1948.

[3]**Handbook of Industrial Loss Prevention,** prepared by the staff of the Factory Mutual Engineering Division, published by McGraw-Hill Book Company, New York, Toronto, London, 1959. □□

Waterbury Fast Burner Gives Firemen Hard Fight

A fierce two-alarm fire, said to have been caused by a loose transformer switch connection, swept the Connecticut Wholesale Supply Company at Waterbury, Conn., on January 15. When first-alarm fire fighters arrived on the scene at 1:12 a.m., flames were spiraling nearly 200 feet into the air and were rapidly moving toward gasoline and oil storage tanks in the area, which is at Fifth Street extension and South Leonard Street.

Fire chief Francis Scully quickly moved firemen in on all sides to battle the flames and brought the blaze under control at 2:46 a.m. Hundreds of spectators watched as the fire ate through lumber and building supplies and swept offices and sheds in the yard. The fire was discovered by Patrolman Eugene Falcone, who reported it to the police radio dispatcher. Upon arrival at the scene Deputy Chief Joseph Maloney radioed a second alarm. On the first alarm Engines 3, 11 and Truck 3 responded. The second alarm brought Engines 4, 10, Truck 1 and Chief Scully. Other calls for extra equipment were made by Chief Scully. Recall was at 2:46 a.m. Fire Marshal Thomas W. Seadden estimated damages at $180,000.—*Tom Magner*

NATURAL COVER FIRES

Continued from page 193

Pitchfork—Removes heavy broken brush

Pike Pole—Pulls snags clear of line; pushes standing snags clear of line when falling

Hoe—Digs to mineral soil

Pick Mattock—Digs and removes rocks

Pick—Loosens dirt and removes rocks

Shovels—Clean out trench; cover stumps and snags with dirt

Matches, Oil Torches, Fusee Flares, LPG Torches—To start backfire

Asphalt Rake—Control and spreading of backfire

Back-Pack Pump—Control of backfire; patrol

Portable radios—Communication

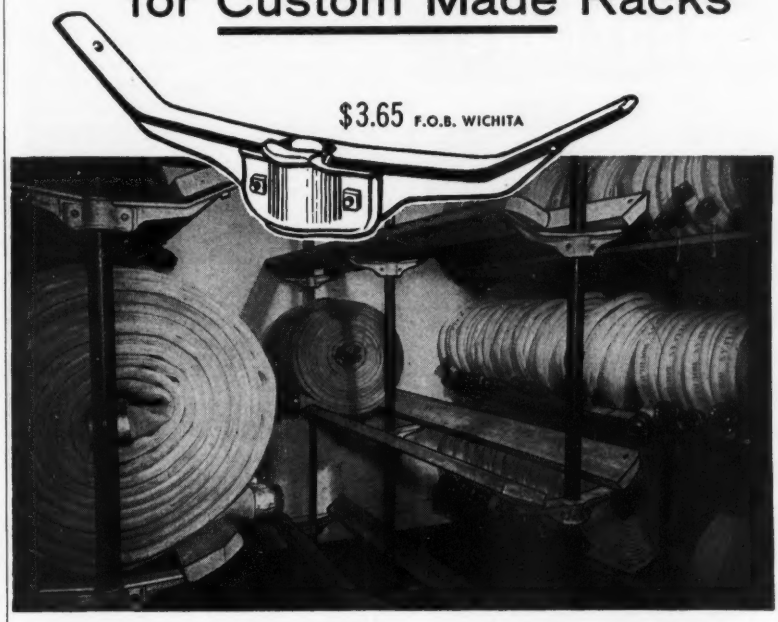
Power tools may also be used, but some heavy equipment requires skilled operators and may be expensive to obtain and maintain. Power saws and bulldozers are very useful in mop-up.

The size of the dry-line crew may be from five to several hundred, and is determined by the number of men available. Crews may be increased or decreased as the fire situation changes, with manpower being added or removed while in operation. Large crews become unwieldy and hard to manage but sometimes are helpful when building a wide line, such as a jeep trail across "new" country, or when a large number of untrained men are to be indoctrinated rapidly in dry-line techniques.

The important factor to remember in outdoor fire fighting is time. When the

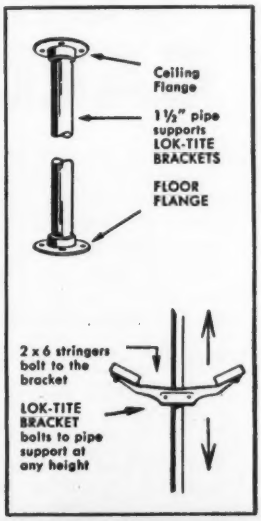
Hose **BRACKETS**
for Custom Made Racks

$3.65 F.O.B. WICHITA



Convert Waste Space To Valuable Storage!

Lok-Tite fire hose brackets provide storage racks in odd dimension areas where ready-made storage will not fit. Encourage good housekeeping practices . . . assure easy hose inspection and correct ventilation by building sturdy storage with Lok-Tite brackets approved by hose manufacturers and fire departments everywhere.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1½" pipe supports LOK-TITE BRACKETS
FLOOR FLANGE
2 x 6 stringers bolt to the bracket
LOK-TITE BRACKET bolts to pipe support at any height

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W. B. MANUFACTURING CO.
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Please send me ____ brackets @ $3.65.
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- Simple to install
- Easy to adjust
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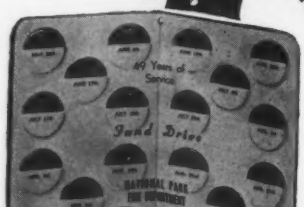

Handford Brown

COIN CARDS

Donations can now be given on the popular budget system. Donors fill cards with quarters and dimes in dated slots, having them ready for collection at the allotted time. A tested and proven way to *increase* returns in your fund raising campaigns.

USED SUCCESSFULLY BY FIRE DEPARTMENTS ALL OVER THE NATION!

WRITE OR PHONE FOR SAMPLES, DETAILS REGARDING DISTRIBUTION AND PRICES TODAY.

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perimeter of the fire is doubled, the area burned (and therefore both the cost of extinguishment and the fire loss) increases four times. It is important at night to route crews so that extinguishment will be complete along a road. Sometimes two crews are sent through the burned area to the head of the fire, working back along a line to the road.

When detected early, many of the natural cover fires can be handled by a single pumping unit with a booster stream. Late detection, rapid fire travel, or the necessity of calling a mutual aid pumper to respond to the initial call, often carry the fires beyond the reach of booster streams (usually 300 feet from the paved highway) before the attack phase can be completed. Many woods and forest fires originate in remote areas as far as one mile from suitable roads. The use of waterless fire fighting has permitted better utilization of manpower at small fires and more rapid control of remote and large fires. □□

SOFT SUCTION HOSE STUDIES

Continued from page 201

a 12-foot 4½-inch soft sleeve. Maximum discharge was again obtained from both pumpers, with a maximum vacuum reading of 20 inches.

Discharge from each pumper was 643 gpm, a total of 1286 gpm

Maximum discharge, using two hard suctions: 1321 gpm

Maximum discharge, using one hard suction and one soft connection: 1286 gpm

Total gain, both pumpers: 35 gpm (17.5 gpm per pumper)

(Note: The soft hydrant connection is 2 feet longer than the hard suction, resulting in additional friction loss.)

Test 3. Using two soft hydrant connections maximum flow was again obtained for both pumpers by running down to zero intake pressure and then accelerating motors until a maximum reading of 25 inches of vacuum was developed.

Discharge from Pumper A (2½-inch outlet) ..... 455 gpm

Discharge from Pumper B (4½-inch outlet) ..... 813 gpm

Total discharge, both pumpers 1268 gpm

At the time this maximum vacuum reading was obtained, both suctions were not as rigid near the pumper inlet as they were at the hydrant outlet, but neither gave any indication of collapsing.

Maximum discharge, using two hard suction connections: 1321 gpm

Maximum discharge, using two soft hydrant connections: 1268 gpm

Total difference, both pumpers: 53 gpm

INTERPRETATION OF TEST DATA

Under these or similar conditions the tests showed:

1. There is no significant advantage to be gained by working at or below zero intake pressure on the pumper.

2. The small additional discharge obtained for each pumper by using a hard

AS MUCH A PART OF THE FIREMAN AS HIS HAT!

PORTER HKP® FIREMAN'S CUTTER

with Search Hook

- Gropes, Grabs, Cuts Smoke-Hidden Wires!
- Saves Time, Lives, Property!
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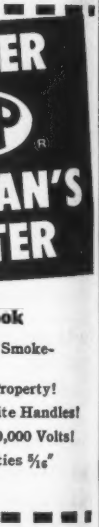
- Two Sizes — Capacities 5/16" and 3/8" Solid Wire!

FORCIBLE ENTRY" HEAVY DUTY CUTTER



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- Hard-Tempered, Center-Cut, Round-Cutting-Edge Jaws!
- Capacity 5/8"!

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Minimizes Chain Repair Time! . . .opens, closes links up to 13/32" in Diam. — in seconds!

Powerful Alloy Steel, Drop-Forged Jaws! . . . and you work standing up — no work-bench needed!

ALSO . . . let us tell you about PORTER'S 16-FOOT POLE PRUNER — ideal for emergency cutting of wires and tree branches!

Your Equipment Supply House can supply you with these tools. Write direct for your free catalog and complete details!

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H. K. PORTER, inc. Somerville 43, Mass.

suction (actually ½ of 53 gpm or 2 percent) is more than offset by the many advantages which accrue in the use of soft hydrant connections.

3. Except in the most unusual circumstances, even though a vacuum reading is obtained at the pumper, some positive pressure remains at the hydrant, preventing the collapse of the connection between the hydrant and the pumper. The difference between the hydrant and the pumper readings would be attributable to friction and other losses in the outlet, fittings and the connection itself.

4. Although the use of soft suction minimizes the problem of accurately positioning a pumper, a sharp bend should be avoided in the connection, as it will greatly increase losses and consequently decrease the water supply. □□

December Fire Losses

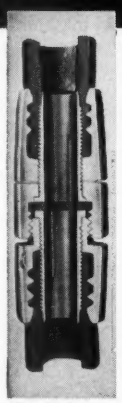
Fire damaged or destroyed an estimated $1,056,266,000 worth of property in the United States last year, the National Board of Fire Underwriters has reported. This is 3.2 per cent more than that for 1957, when estimated monthly losses totaled $1,023,190,000.

According to Lewis A. Vincent, NBFU's general manager, estimated losses for December 1958, totaled $100,523,000, an increase of 40.5 per cent over losses of $71,539,000, reported for November 1958, and an increase of 9.8 per cent over losses of $91,519,000 reported for December 1957.

These estimated losses include an allowance for uninsured and unreported losses.

Automatic Electric Assists Scout Program

First Class Scout Lawrence R. Kesselring of Lombard, Ill., follows instructions of Plant Fire Marshal Edward Zalenka, Automatic Electric Co., Northlake, Ill., in learning proper method of using a carbon-dioxide extinguisher. The company, which originated the dial telephone, cooperates with the scouting program by assisting boys meet the requirements for the industrial plant safety merit badge.



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1. FULL FLOW—no significant reduction of internal diameter. Pressure is assured.
2. STREAMLINED—round-edged design, no projection.
3. INTERNAL EXPANSION—prevents shrinkage of the hose at the coupling.
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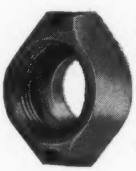
6. WEIGHT—no heavier than comparable expansion type coupling.



Available in polished bronze in both standard rocker and forestry lug. 1½" in production. Larger sizes will be available.

Successfully Tested To Bursting Point Of Double Jacket, Single Jacket And Sweat Hose

Recognizing the trend toward higher and higher pressures in fire fighting, Bar-Way has developed a revolutionary coupling that will withstand the pressure and the pull. This new coupling is designed to fire fighting specifications. It guarantees full flow, full pressure, it is streamlined to slip over obstructions, and it can be interchanged anywhere at any time without damage to either the tube or fabric. Specify Bar-Way! Write Bar-WayMfg.Co.,Stamford,Conn.

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"SIERRA" First Quality Fire Hose

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Fire - Booster - Suction

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THE WATCH DESK

overhauling the firemanic news of the day

Sitter Sits and Sits

We're assured this is a true story; only the names have been omitted to protect the injured. It happened in a suburb of St. Paul, Minn. It's the tale of a baby sitter, hired by a young couple to watch their children while the couple attended a party, who really stuck to her job—and sat and sat and sat—far beyond the call of duty.

In instructing the 16-year-old baby sitter, the lady of the house forgot one thing—that she had sprayed some of the bathroom equipment with a white plastic paint, "guaranteed not to rub off, peel, chip or blister, the kind that stays on."

Early in the evening the sitter visited the bathroom. And when the young couple returned home at 3:00 a.m., they found the near-panic-stricken sitter still sitting there.

First the mother tried turp's in an effort to unseat the unhappy sitter, but her efforts only proved the paint was as "permanent" as advertised.

Then her hubby called the family doctor. He arrived at 4:00 a.m. and applied alcohol—but with no results. "However," he assured the woebegone sitter cheerfully, "we'll find a way." As he was trying to figure out the way, he tripped over the sitter's foot, fell headlong against the bathtub, knocking himself cold. Two down—one out, none off.

The young husband then put in an SOS for the rescue squad—and an ambulance. Within minutes aid arrived. Rescuers scooped up the doctor, who suffered a concussion, and the baby sitter with the seat still attached, and trundled them off to the hospital. Both reportedly have recovered their physical, if not mental, equilibrium.

Sun Spots Before Their Eyes?

Sirens went haywire and the sounds of false alarms filled the air in Dutchess, Putnam and Greene Counties, N. Y., on December 10. Up and down the Hudson Valley the volunteers were on the jump—but nobody knew from nothing!

Seems the sirens are controlled by radio from central headquarters in each county. Plagued by calls of the vamps from wide areas, asking where the fires were, headquarters began checking and learned there was some kind of interference on the radio frequencies used by each and this apparently touched off the sirens.

Theories on the cause were a dime a dozen, but the real radio hams insisted that magnetic storms on the sun, which often affect radio communications, were to blame. To throw the matter still further out of focus, some of the listeners-in on the fire frequency heard sounds of somebody speaking in an Oriental language. This was believed to have come from Hanoi in North Viet Nam, some 13,750 miles around the globe.

Hot Off the Tape

In Willimantic, Conn., reporter Bruno Sniders of the local Chronicle explained his tardiness in reporting to fire headquarters on his daily news-gathering stint because he had to help douse a blaze in his own office. . . . Then there's the story about the Pembroke College freshman in Providence, whom we'll call Miss Smith, who got herself marooned in a tree trunk 20 feet above the ground. It took a fire department rescue squad and a ladder to get her down. Her excuse for tree climbing was that "she felt exuberant." Well maybe she did, but the Providence brothers didn't! . . . Speaking of exuberance, two teen-age boys used homemade bombs to bomb seven U. S. mail boxes in Fontana, Calif., last month. Both confessed blasts which wrecked the containers. One sent gas fumes throughout the area when it cracked a gas meter on the

Photograph taken during a full-scale demonstration of Säf fire retardant paints at the largest United States Air Force base in the Eastern Air Defense Command. Building in foreground was painted with Säf and ignited under identical fire-load conditions at the same time as building in background. In Säf-painted building fire was contained in fire-load area and structure was unimpaired while fire burned itself out. Unpainted building was completely demolished.

Säf stops all fires

FIRE RETARDANT PAINTS

• STOPS FLAME SPREAD
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These are extreme fire-hazard areas which can be made safe . . . with Säf Fire Retardant Paints:

• BASEMENTS • CELLARS • BOILER ROOMS • STAIRWELLS • HALLWAYS • CORRIDORS
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Please send me, at no obligation to myself or my organization, your complete, illustrated descriptive literature and technical data (including all U.L. ratings) on Säf fire retardant paints.

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ground. . . . In Starkville, Miss., 750 students of Mississippi State scurried to safety when a spectacular fire raced through a block-long college dormitory. Six youths suffered injuries. It's said a campus policeman's early alert and a calm evacuation prevented a major tragedy. . . . Out in Cheyenne, Wyo., a jar of pickles brought Cheyenne blaze-beaters on the run. It happened this way: Mrs. W. H. Tyler dropped the pickles. The jar broke and juice ran into a floor plug. There was a short—and the resultant fire scare. Firemen's report: "One sticky floor. One inoperative floor plug." . . . Recently more than 100 firemen from 11 communities in Westchester and Putnam Counties fought a 12-hour battle to control a brush fire which swept along a mile of New York Central railroad tracks. One fireman was frostbitten. . . . Firemen of Santa Maria, Calif., have the "sweetest job in town." At least that was the case recently when they responded to a call at the home of Mrs. Harold Jordan. No fire—but they discovered honey oozing out of Mrs. Jordan's bathroom wall. It developed that bees had taken up housekeeping between the studding. . . . In Jackson, Miss., Otis Keys jumped out of bed on January 24 to see the fire when he heard sirens. He followed the trucks to Campbell College, watched a dormitory burn, then returned home to discover that a fire had destroyed his house. . . . In Whippany, N. J., 120 Seeing Eye dogs, trained to guide the blind and keep calm in emergencies were led to safety from their training kennel January 14, when fire broke out in their quarters. Fire Chief Fred Guerin of the Whippany Volunteer Fire Department said evacuation was easy because the dogs were "tempermentally stable."

Hazards Can Be "Extra Curricular"

Firemen are not always injured while fighting fires. Take the case of William F. Rogan, a volunteer at Milford, Conn., who was hospitalized with a head injury, a reminder that firemen undergo a certain amount of risk even while selling tickets to their annual ball!

Rogan was one of several firemen engaged in a door-to-door campaign to sell tickets to the Arctic Engine Company ball, when, the report says, he apparently stepped into a 9-inch ditch beside the road on West Main Street and fell, striking his head on a rock. He was found in an unconscious condition and rushed to Milford Hospital, where he was treated for a cut on the head and a puncture wound of the neck.

Tom Magner

Not Even a Singe?

Firemen at Station No. 6, South Marion, Ind., Fire Department, have been prohibited from cutting each other's hair while in quarters. The state considers the practice of "barbering without a license," a violation of the law.

—George Proper

Oil Filler Plug
Oil Reservoir
Automatic lubrication of all threads and bearing surfaces each time hydrant is operated.
Two "O" Ring Seals
Permanent seals without adjustments or binding.
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Prevents permanent traffic damage and permits facing of nozzles, extensions or barrel changes without digging.
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Straight threads permit easy removal from above without digging.
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Operating threads and bearing surfaces sealed from water.
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Interlocking lugs plus calking prevent blow-out.
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Closes with the water pressure—and stays closed. Permits repair or modification without water shut-off!
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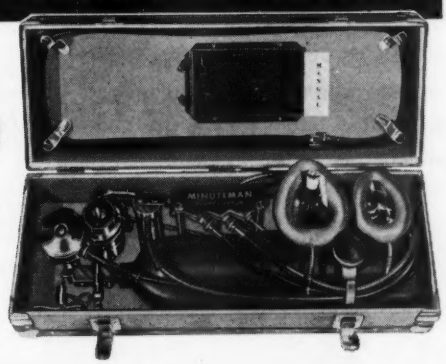

When a life is at stake, grab your MINUTEMAN and *run*—don't walk—to the scene. You *can* run because this compact instrument weighs under 30 pounds, with cylinder, yet combines the functions of resuscitator, inhalator and aspirator. With an extra Midget attachment, it can resuscitate two patients and aspirate a third simultaneously.
The MINUTEMAN protects against ALL respiratory emergencies—smoke or fume suffocation, drowning, heart attack, electric shock, asthma, etc. It operates about 40 minutes with a D cylinder and refills are inexpensive. Pressures are adjustable from Adult to Infant, a range essential in chest injuries, where the patient makes the first efforts to breathe after being overcome, and in working with small children. The instrument is easily regulated to mixtures from 100% oxygen to 50% oxygen and 50% nitrogen from the air. This feature is extremely valuable in prolonged cases, avoiding the possibility of oxygen poisoning.

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COMING EVENTS

Apr. 2-4—Illinois Fire Chiefs Association. Annual meeting, Peoria, Ill. Secretary-Treasurer, Assistant Fire Chief Lester Manace, Central Fire Station, 437 Liberty Street, Peoria, Ill.

Apr. 4-5—Fire Fighters Association of Missouri. Annual meeting, Excelsior Springs, Mo. For information, write John L. Welsch, Secretary-Treasurer, 305 Forest, Harrisonville, Mo.

Apr. 11—Delaware Fire Chiefs Association. Semi-annual meeting, Camden, Dela. Secretary, Howell H. Barnes, Smyrna, Dela.

Apr. 23-26—California Rural Fire Association. Annual meeting, Fresno, Cal. For information contact Chief William Pennington, c/o California Division of Forestry, 210 South Academy Avenue, Sanger, Calif.

Apr. 27-29—Campus Safety Association. Annual meeting, Michigan State University, East Lansing, Mich. For information, contact Norman V. Steere, Chairman, Conference Planning Committee, Campus Safety Association, Higher Education Section, National Safety Council, 425 North Michigan Avenue, Chicago 11, Ill.

May 7-9—Florida State Firemen's Association. Annual meeting, Marathon, Fla. For information write R. O. BuShea, Chairman, P. O. Box 200, Marathon Shores, Fla.

May 10-12—Mutual Aid Conference. Annual meeting sponsored by the Baton Rouge Mutual Aid System, Baton Rouge Chapter of American Society of Safety Engineers, and the Industrial Security Institute, in Baton Rouge, La. For information, write Fire Chief Robert A. Bogan, P. O. Box 96, Baton Rouge, La.

May 17—Southern Wisconsin & Northern Illinois Firemen's Association. Spring meeting, place to be announced. Secretary, Herman Pfund, New Glarus, Wis.

May 18-19—Southeastern Association of Fire Chiefs. Annual meeting, Durham, N. C. Secretary-Treasurer, Chief C. W. Wyrick, Fire Headquarters, Greensboro, N. C.

May 21-23—Eastern Association of Fire Chiefs. Annual meeting, Jamestown, N. Y. Secretary, Chief Edwin J. Clark, Box 328, Wayne, Pa.

June 5-6—Indiana Volunteer Firemen's Association. Annual meeting, La Porte, Ind. Secretary, Harry Fries, R. R. 3, Walkerton, Ind.

June 11-13—Montana State Fire Chiefs Association. Annual meeting, Miles City, Mont. Secretary-Treasurer, William S. Hayes, 208 Eklund Building, Great Falls, Mont.

June 22-25—New England Association of Fire Chiefs. Annual meeting, The Wentworth, Portsmouth, N. H. Secretary-Treasurer, John W. O'Hearn, 206 Mt. Auburn Street, Watertown 72, Mass.

June 28-30—Saskatchewan Association of Fire Chiefs. Annual meeting, Valley Centre, Fort Qu'Appelle, Sask. Secretary-Treasurer, Chief Ray Horne, Fire Headquarters, Swift Current, Sask.

Aug. 20-22 — Cumberland Valley Volunteer Firemen's Association. Annual meeting and fire prevention conference, Harrisonburg, Va. Secretary, D. Stalnaker, Fire Company No. 1, 56 Newman Avenue, Harrisonburg, Va.

Aug. 31-Sept. 3—International Association of Fire Chiefs. Annual meeting, Grand Rapids, Mich. Secretary-Manager, B. Richter Townsend, 232 Madison Avenue, New York, 16, N. Y.

Sept. 17 — Delaware Fire Chiefs Association. Semi-annual meeting, Christiana, Dela. Secretary, Howell H. Barnes, Smyrna, Dela.

Sept. 21-23—New Mexico State Firemen's Association. Annual meeting, Carlsbad, N. M. For information write Chief Ira J. Stockwell, Fire Station No. 1, Carlsbad, N. M. □□

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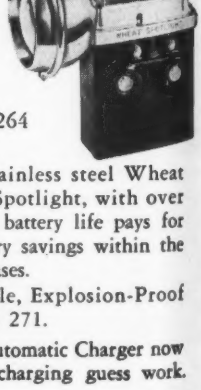

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FIRE COLLEGES

Civil Defense Instructor Training Course for Eastern Area—Apr. 6-10, **Basic Civil Defense**; Apr. 13-17, **Radiological Monitoring for Instructors**; Apr. 20-24, **Radiological Monitoring for Instructors**; Apr. 20-24, **Basic Civil Defense**; Apr. 27-May 1, **Radiological Monitoring for Instructors.** All sessions to be held at the Eastern Instructor Training Center, Office of Civil And Defense Mobilization, Brooklyn 35, N. Y. For information, write the Center at the above address.

Connecticut Fire Officers Conference—Apr. 8-10, University of Connecticut, Storrs, Conn. For further information contact Roy W. Adams, Director, Vocational Training Field Service, State Department of Education, 490 Capitol Avenue, Hartford, Conn.

Connecticut State Fire College—June 8-12, New Haven Fire Department Drill Grounds. For information write Roy W. Adams, Director of Vocational Training Field Service, State Department of Education, 490 Capitol Avenue, Hartford, Conn.

Delaware Volunteer Firemen's State Fire School—Apr. 11-12 and Apr. 18-19, Camden, Dela. Director, C. Wesley Robinson, 201 James Place, Wilmington Manor, New Castle, Dela.

Florida State Fire College—Mar. 23-27—**Units 104,** Fire Streams; **206,** Fire Prevention and Protection; **208,** Fire Department Administration. May 19-21—**Liquefied Petroleum Gas.** Aug. 3-7—**Seminar in Arson Investigation and Detection.** Sept. 7-11—**Units 101, 107, 201.** Sept. 14-18—**Units 102, 106, 202.** Sept. 21-25—**Units 103, 105, 204.** Sept. 28-Oct. 2—**Units 104, 206, 208.** For information, contact W. H. Barnett, Superintendent, P. O. Box 785, Ocala, Fla.

Illinois Short Course for Fire Department Pump Operators—Apr. 13-16, Robert Allerton Park, Monticello, Ill. For information write J. I. Fetters, Firemanship Training Program, Division of University Extension, University of Illinois, 725 South Wright Street, Champaign, Ill.

Indiana Fire Training Program—Sept. 8-11—**26th Annual State Fire School;** Oct. 27-29—**Fire Inspectors Course;** Dec. 1-2—**Fire Management Course.** All courses will be held at Purdue University, Lafayette, Ind. For information, contact Professor Shelby Gallien, Director, Public Safety Institute, Purdue University.

International Arson Investigator's Seminar—Apr. 27-May 1, Memorial Union Building, Purdue University, Lafayette, Ind. For information write Professor Shelby Gallien, Director, Public Safety Institute, Purdue University, Lafayette, Ind.

Maryland Fire School—Apr. 6-9, **Eighth Annual Short Course for Fire Inspectors;** May 1-2, **Barton American Pumps;** May 8-9, **Waterous Pumps;** May 15-16, **American LaFrance Pumps;** May 22-23, **Hale Pumps;** June 5-6, **Seagrave Pumps;** Aug. 3-5, **Third Annual Aerial Ladder Short Course;** Sept. 1-4, **Twenty-Sixth Annual Short Course for Firemen.** All sessions will be held at the Fire Service Building, University of Maryland. For information, write Robert C. Byrus, Director, Fire Service Extension, University of Maryland, College Park, Md.

Morris County, N. J., Fire School—April 7, Roxbury Fire Headquarters, Succasunna; May 5, Madison Fire Department Headquarters; June 2, Whippany Fire Headquarters; July 7, Rockaway Boro Fire Headquarters; Aug. 4, Fairchild Fire Co., Morris Township; Sept. 1, Par-Troy Hills District #6 Headquarters. For information, write Robert H. Wright, Publicity Chairman, Long Hill Lane, Chatham, N. J.

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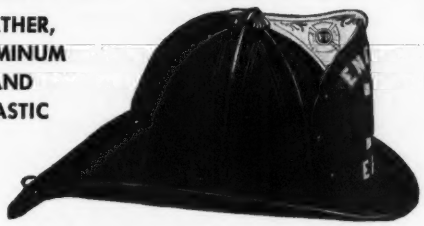

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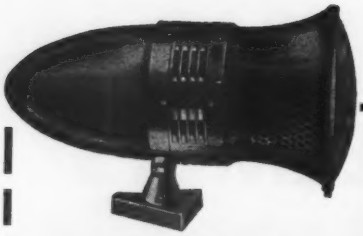

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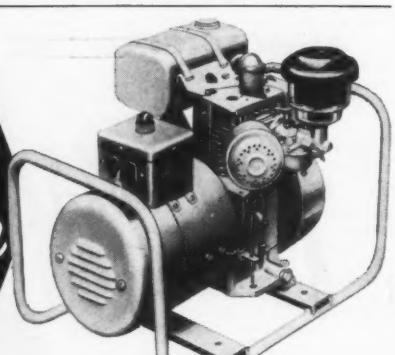

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Nebraska State Fire School—May 3-5, Municipal Airport Grounds, Grand Island, Nebr. For information contact Russell D. Salak, Sec., Fire School Committee, P. O. Box 312, Schuyler, Nebr.

North Dakota Fire School—Mar. 23-25, **Officers Training School,** Minot. May 11-13, **Instructors Training School,** Bismarck. Limited number of applications accepted. For information, write to J. K. Eckes, Secretary, North Dakota Firemen's Association, Killdeer, N. D.

Northeastern Pennsylvania Volunteer Firemen's School—June 6-7, Tunkhannock, Pa. For information contact James H. Oakey, Director, P. O. Box 67, Tobyhanna, Pa.

Ohio Industrial Fire Safety Seminar—Mar. 25-26, Marietta, Ohio. For information contact L. E. Shingledecker, Supervisor of Fire Safety, Nationwide Insurance, 246 North High Street, Columbus 16, Ohio.

Ontario Fire College—Apr. 6-10, **Perth County Regional School,** Stratford; Apr. 13-17, **York County Regional School,** Aurora; Apr. 22-24, **University of Toronto Fire Chiefs Conference,** Gravenhurst. For information contact Fire Marshal W. J. Scott, 210 Huron Street, Toronto 5, Ont.

Pennsylvania Fire School — Mar. 30-Apr. 3, May 25-29, Aug. 24-28, Nov. 30-Dec. 4, **Fire Department Officership Course;** Apr. 13-17, June 8-12, Aug. 17-21, Oct. 5-9, **Basic Fire Fighting Course;** Apr. 27-May 1, June 22-26, Aug. 31-Sept. 4, Oct. 19-23, **Fire Department Pump School;** May 11-15, July 6-10, Sept. 14-18, Oct. 26-30, **Advanced Fire Fighting Course;** July 20-24, Aug. 24-28, Sept. 28-Oct. 2, Nov. 16-20, **Ladder, Rescue and Salvage Course;** Aug. 3-7, **21st Annual Pennsylvania State Fire School.** All sessions to be held at the Pennsylvania State Firemen's Training School. For information write Art Espey, Director, Box 631, Lewistown, Pa.

Southern Wisconsin and Northern Illinois Fire School—Sept. 13, Truax Field Air Force Base, Madison, Wis. Secretary, Herman Pfund, New Glarus, Wis.

Texas Fire School—July 19-24, Texas A & M College, College Station. Director: Chief Henry D. Smith, Texas Firemen's Training School, College Station, Tex.

Tri-State Fire School—Sept. 14-18, Huntington, W. Va. For information write Captain R. M. Myers, Secretary Planning Committee, c/o Fire Chief's Office, 816—9th Street, Huntington, W. Va.

Virginia Fire College—June 22-26, College of William and Mary, Williamsburg, Va. For information write Chief Elliott W. Jayne, Director, Williamsburg Fire Department, Williamsburg, Va.

Virginia State Fire School—Aug. 24-28, South Boston, Va. For information write R. Lawrence Oliver, State Board of Education, P. O. Box 654, Harrisonburg, Va.

Washington State Command School for Senior Fire Officers—May 26-29, Yakima, Wash. For information, contact Chief W. K. Moore, Fire Headquarters, Yakima, Wash. □□

Ohio Teachers To Learn Fire Rescue Methods

Fire prevention and emergency rescue instruction will be given to Ohio's school teachers according to an announcement by State Fire Marshal Wilson McLaughlin, who said the recent Chicago school disaster points up the need for such a program. Wayne Jenkins, chief of the Fire Prevention Bureau, will be in charge of the program. Instruction will be given to both public and parochial schools on request.

Persons in the News

Strickfaden to Be Honored by Columbus

Chief Walter G. Strickfaden, 53-year veteran of the Columbus, Ohio, Fire Department will celebrate his 75th birthday on March 30. In honor of the occasion, Mayor M. R. Sensenbrenner has proclaimed that date as "Chief Strickfaden Day."

Widely known and popular in fire service and civic circles, he joined the department on June 18, 1906 and was appointed chief on May 16, 1948. He is a member of the International Association of Fire Chiefs, the Ohio Fire Chiefs Association and the Ohio State Fire School executive committee.

One of Chief Strickfaden's sons, James W., is a fireman-member of the department.

Swedish Chief Studies American Techniques

Assistant Fire Chief Sune Lardner of the Halmstad, Sweden, Fire Department recently spent four and one-half months in the United States, studying American fire prevention and fire fighting techniques. His visit was the result of a

Assistant Chief Lardner is greeted by Chief William L. Miller during visit to Los Angeles Fire Department—*Official Photograph L.A.F.D.*

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This fine piece of apparatus, in service in the Big Rapids (Michigan) Department, is a product of the American Fire Apparatus Company, Battle Creek, Michigan, and features the strong, smooth operating, 65 foot, three-section MEMCO AERIAL LADDER.

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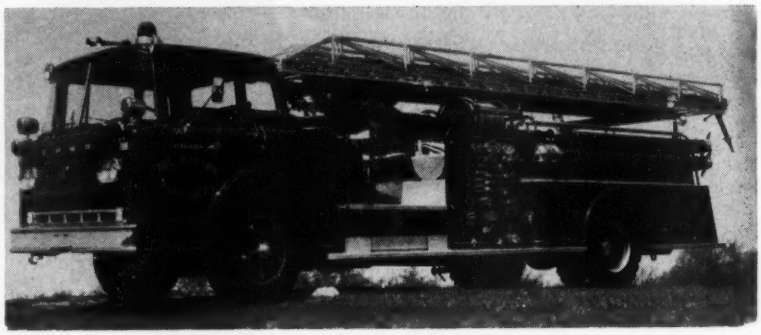

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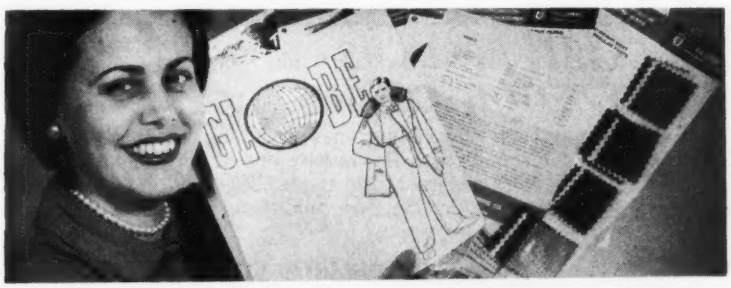

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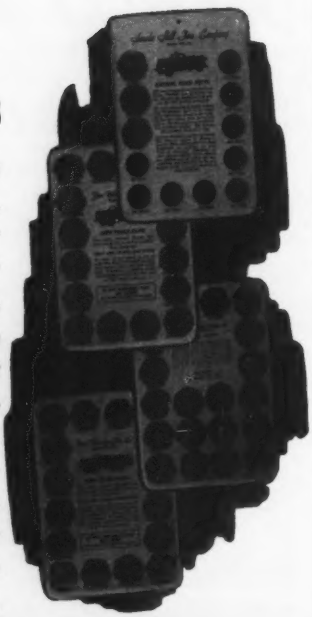

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Chief Lardner was in the United States fom last October 2 until February 18. During that time he visited Boston, Detroit, Chicago, Minneapolis, Salt Lake City, Las Vegas, Los Angeles, New Orleans and New York City. Before leaving for home, Chief Lardner asked the editors of FIRE ENGINEERING to express his thanks to all who had received him so hospitably in the above-mentioned cities.

Eric Castler is chief of the Halmstad Fire Department, which maintains a force of 35 full-time and 70 part-time members. It has in service two trucks, four engines, one hose wagon, one tanker and three ambulances. The department averages 225 responses per year for fires and rescue work but not including ambulance service. Halmstad has a population of approximately 50,000.

Allaways Packs Helmet

Andrew Allaways, who only recently returned to this country after 18 months as assistant chief at a Saudi Arabia U. S. Air Force Base, has again packed his well-traveled helmet. "Andy," as he is known to a host of friends, has accepted a position as fire chief at an Air Force installation near Sinop, Turkey. With the exception of the chief, all fire fighting personnel at the base are Turkish.

Korn Union City Chief

Barney Korn, a veteran of over 38 years' service with the Union City, N. J., Fire Department and deputy chief for the past 24 years, was appointed fire chief on August 7, 1958. He succeeded the late Chief Charles Friedel.

Almgren Family Honored

Former San Diego Fire Chief Louis Almgren II, 83, (right); his son, Louis III, California deputy state fire marshal (center) and Louis IV, his son, engineer, Board of Fire Underwriters of the Pacific, Los Angeles (left rear) and his boy, Louis Almgren V, were guests of honor, together with their wives and a small army of grandchildren at the annual Christmas party of the Carlsbad Fire Department, Chief R. W. Hardin. The Almgren contingent was featured on a telecast of the department's yuletide festivities, which saw the Carlsbad fire station converted into a veritable Santaland.

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What's Burning

THE FOLLOWING LIST includes fires of $10,000 and over in the United States and Canada for the period from January 21st to February 19th.

Mobile, Ala.—Holiday, Inc. dress shop damaged. Burglary and arson.
Cash, Ark.—Farmer's Gin Co. cotton gin destroyed.
Fort Smith, Ark.—Forest Products Co. lumber yard damaged.
Pacific Palisades, Calif.—Ranch-style dwelling of actor Richard Boone extensively damaged.
Salinas, Calif.—Mission Line Supply Co. destroyed.
San Francisco, Calif.—Bush Electric Co. destroyed.
Brookfield Center, Conn.— Najjar's Nutmeg Inn destroyed.
Burrville, Conn.—Former Torrington & Winchester Railway Co. trolley barn, housing Century Fan & Ventilator Co., Inc., destroyed.
Danbury, Conn.—Sugar Hollow Road branch of Perkin-Elmer Corp. destroyed.
Farmington, Conn.—Gymnasium at Miss Porter's School severely damaged.
Hartford, Conn.—Faith Congregational Church heavily damaged.
Southington, Conn.—Ideal Tool & Die Works considerably damaged.
Wallingford, Conn.—Porto Transport Co. terminal building destroyed.
Stockley, Del.—Laundry building and boiler house at Delaware Hospital For Mentally Retarded destroyed.
Wilmington, Del. — McMahon's Warehouse heavily damaged.
Washington, D. C.—Shubert Theater damaged.
Atlanta, Ga.—Rambler-American Motors supply building damaged.
Gainesville, Ga.—Building housing Clary's 5 and 10¢ store destroyed. Arson suspected.
Milledgeville, Ga.—Three business houses destroyed; two others damaged.
Sandy Springs, Ga. — Hammond Elementary School destroyed.
Nemp, Idaho — Showalter Chevrolet Co. destroyed.
Chicago, Ill.—Farren School damaged.
Decatur, Ill.—Main hangar at Decatur Municipal Airport destroyed; adjoining hangar damaged.
Dunkel, Ill.—Checkerboard Soybean Co. elevator destroyed; adjoining bins damaged.
East St. Louis, Ill. — Integrity Supply Inc. plumbing supply warehouse damaged.
Glen Ellyn, Ill.—Glen Acres Nursing Home severely damaged.
Mattoon, Ill.—Charleston County Club clubhouse destroyed.
Palatine, Ill. — Inverness Country Club destroyed.
Springfield, Ill.—Glenwood High School damaged.
Greenfield, Ind. — Wilfong Oil Co. storage building destroyed.
Indianapolis, Ind.—Chevrolet body plant damaged.
Michigan City, Ind.—Building housing Edward's Store for Men, Liberty Theater, cleaners and offices, damaged.
Warsaw, Ind.—Home Furniture Mart damaged.
Corning, Iowa—Anthony Co. destroyed; adjoining Line's Furniture Store and P. M. Place Variety Store damaged.
Des Moines, Iowa — Warehouse building of Ringland-Johnson Co. contracting firm destroyed.
Des Moines, Iowa — Building housing West Grand Fraternal Club, West Grand Tap Room and a book store, destroyed.
Missouri Valley, Iowa — Tamarack Club destroyed.
Waterloo, Iowa — Building housing Wheeler Motor Co. and Repass Auto Parts Co. damaged.
Ashland, Ky. — Business-apartment building, housing cab firm, extensively damaged.
Cub Run, Ky.—S. P. Appleby and F. B. Meredith General Stores, Masonic Lodge Hall and dwelling of Alex Meredith destroyed.
Danville, Ky.—Salt River Baptist Church destroyed.

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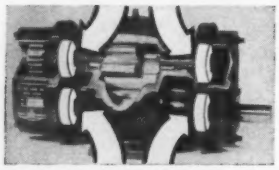

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1986 HOME AVE., DAYTON 7, OHIO

Kuttawa, Ky.—High Wake & Co. retail store destroyed.
Lexington, Ky.—Automobile warehouse of Lagrew Motors destroyed.
Louisville, Ky.—Steel Fabricators plant damaged.
Springfield, Ky.—Springfield Motor Co., auto and farm equipment agency, destroyed.
New Orleans, La.—Rivoli Theater damaged.
York Village, Me.—Hobson Block, housing wallpaper store, grocery, offices and apartment, destroyed.
Baltimore, Md.—Fifth Regiment Armory damaged.
Boston, Mass.—Grossman Lumber Co. storage shed destroyed.
Boston, Mass.—Pride's Crossing, mansion of William E. Dexter, destroyed.
East Longmeadow, Mass.—Kelly-Fradet Lumber Co. main shed destroyed.
Haverhill, Mass.—Building housing Tip Top Cafe, G. H. Dodge Inc., firms of Arthur D. Littlefield, Aldrich W. Lawyer and others, adjacent building damaged.
Hyannis, Mass. — Clothing Center on Main Street destroyed. Overheated electric motor.
Lowell, Mass.—Building housing Roland Inc., general merchandise store, Beauty Creators, dentists' offices and apartments, damaged.
Medford, Mass. — Buildings at 53-57 Swan Street and 44-58 and 60 Union Street destroyed; Hudson Bus Co. terminal damaged.
Tewksbury, Mass. — Catholic Oblate Mission House destroyed.
Waltham, Mass.—Building housing Gray Furniture Co. and Barry Controls, machine shop firm, destroyed.
Westboro, Mass. — Building housing Borden's Furniture Co. and McDonald's Market destroyed.
West Peabody, Mass. — Salem Country Club stables destroyed.
Westport, Mass.—William McKaskie Inc., woodworking and machine shop, damaged. Short circuit.
Adrian, Mich.—Concrete-mixing plant of Kriegshogg-Lenawee Co. damaged.
Bad Axe, Mich.—Bowron & Bowron Co. farm machinery building destroyed.
Bay City, Mich. — Hudson Laundry & Dry Cleaning Co. destroyed; adjacent dwelling of Frank Neveau damaged.
Benton Harbor, Mich.—Building housing Walgreen Drug Store, Fannie May Beauty Salon and offices, damaged.
Detroit, Mich.—Old Packard motor car plant, now housing several manufacturing firms, damaged.
Flint, Mich.—Abbott's Fine Foods Supermarket damaged.
Hancock, Mich.—P. H. Exeley Co. auto body and repair plant destroyed.
Ionia, Mich.—Four buildings and cattle on Walter Reed farm destroyed.
Ishpeming, Mich.—107th Engineer Battalion, Michigan National Guard Armory, housing headquarters company, damaged.
Jackson, Mich.—Jackson Upset Products Co. and Hess Machine Co. damaged.
Marshall, Mich.—Priest Machine & Plating Co. damaged.
Otsego, Mich. — Otsego Hotel, housing Jack Landi Clothing, Nichols Electric and Appliance Store, Root Beauty Salon, Wood's Insurance Agency and Witt Dance Studio, destroyed.
Royal Oak, Mich.—Lipson and Gourwith market damaged.
St. Paul, Minn.—Hardware storage building damaged.
Meridian, Miss.—Offices, showroom and shop of automobile firm destroyed. Explosion.
New Hebron, Miss.—Lawrence County Bank destroyed.
Starkville, Miss.—Mississippi State University men's dormitory virtually destroyed.
Kewanee, Mo.—Kewanee High and Elementary School destroyed.
St. Louis, Mo.—F. Burkhart Mfg. Co. upholstery plant and warehouse destroyed.
Lewistown, Mont.—Burks Hotel destroyed.
Manchester, N. H.—Essex Rooming House and stores damaged. Faulty wiring.
Keyport, N. J. — F. W. Bittner Insurance and apartment house damaged.
Lodi, N. J.—The Pit Restaurant destroyed.
Rahway, N. J. — Rahway Recreation Center, bowling alleys and lounge destroyed.
Cicero, N. Y.—Onondaga County Airport hangars and aviation school building destroyed. Defective wiring.
Monticello, N. Y.—Row of buildings, housing

McINTIRE GATE VALVES

Fig. 164AN

4½" swivel female x two 2½" male Gated Siamese. Quick opening, ¼ turn valves.

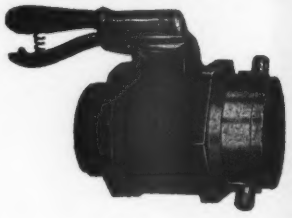

Fig. 163

Made either Right Hand or Left Hand 2½" male x female, gate valve.

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1 Depot Plaza Mamaroneck, N. Y.

Oriental Restaurant, other stores and apartments, damaged.

Northville, L. I., N. Y.—Potato barn damaged. Exploding heater.

Seneca Falls, N. Y.—Seneca Knitting Mills Co. plant destroyed.

Asheville, N. C.—Von Ruck Dairy Barn destroyed.

Charlotte, N. C.—Erwin Construction Co. sheds destroyed.

Charlotte, N. C.—Mt. Olivet Baptist Church destroyed.

Fairmont, N. C.—Capitol Beauty Shop and Coleman's Doughnut Shop destroyed.

Henderson, N. C.—Henderson Country Club destroyed.

Raleigh, N. C.—Southern Foundry Co. damaged.

Roanoke Rapids, N. C. — Wilkes Motor Co. building destroyed.

Valdese, N. C.—Connelley Springs Methodist Church destroyed.

Cincinnati, Ohio—Barker Greeting Card Co. damaged.

Cleveland, Ohio — Fitzwood Hotel, housing seven stores, destroyed.

Cleveland, Ohio—Saddle and Sirloin Restaurant destroyed. Defective wiring.

Cleveland, Ohio—Van Aken Shopping Center, housing Casual Center, damaged.

Columbus, Ohio—Kroger Co. supermarket damaged. Overheated motor.

Marysville, Ohio—Magnetic Springs Rehabilitation Foundation damaged.

Milford, Ohio—Ohio Valley Egg Cooperative damaged.

North Bend, Ohio—Raymond City Coal and Transportation Co. damaged.

Norwalk, Ohio—Gilger Theater building destroyed. Spark from welder's torch.

Portsmouth, Ohio — Valley Supply Co. hardware firm damaged.

St. Marys, Ohio—St. Marys Trucking Co. damaged.

Ada, Okla.—Ada *Evening News* building damaged.

Oklahoma City, Okla. — Star-Spencer High School trades building destroyed.

Waldport, Ore.—Waldport Ranger Station destroyed.

Bristol, Pa.—Delhaas High School damaged. Defective wiring.

Donaldson, Pa.—Donaldson School destroyed.

Erie, Pa.—Cascade Foundry Co. destroyed.

Ellwood City, Pa.—National Plumbing Fixture Co. damaged.

Mayfield, Pa.—St. John's Russian Orthodox Church damaged.

Middletown, Pa.—Seneca Inn destroyed.

Philadelphia, Pa.—Al-Len's Building Supplies Co. destroyed.

Philadelphia, Pa.—Calvin Presbyterian Church damaged.

Philadelphia, Pa.—George B. Newton Elementary School heavily damaged.

Philadelphia, Pa.—Philadelphia Magnesia Co. heavily damaged.

Philadelphia, Pa.—Millwork shop and warehouse of Paul Gross destroyed.

Pine Grove, Pa. — Coal breaker of Thomas Schneck destroyed.

Rome, Pa.—Dwelling of Dr. I. V. Stoll destroyed. Defective wiring in auto.

Willow Grove, Pa. — Operations building at Willow Grove Naval Air Station destroyed.

York, Pa.—Miller's of York Inc. apartments and warehouse destroyed.

Greenwood, S. C.—Rock Presbyterian Church and new school annex destroyed.

Lebanon, Tenn.—Truckers Cross Roads School building destroyed.

Selmer, Tenn.—Leapwood Gin destroyed.

Dallas, Tex.—Republic National Life Insurance Co. home office damaged.

Fort Worth, Tex.—Buddies Super Market destroyed.

Houston, Tex.—Dwelling of Jack Greenwood on Memorial Drive damaged.

Marshall, Tex.—Atlas Powder Co. Darco Division plant damaged.

Mesquite, Tex. — Building housing Mesquite Boat Co., Ralle-Conway Dress Mfg. Co. and Telephone Co. offices, damaged.

Salt Lake City, Utah—Lang Co. warehouse damaged.

Bennington, Vt.—General Stark Theater; Joy's Department Store; toy, sandwich, and flower shops; Bennington Social Club and offices of International Revenue Service and State's Attorney, destroyed.

Please turn page

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Charlotte, Vt.—Barn on Clement Baker farm destroyed.
Hardwick, Vt.—W. S. Hill farm products store building damaged.
Peacham, Vt.—MacKay Hall dormitory, library and general-store dwelling at Peacham Academy, founded in 1795, destroyed.
Richlands, Va.—Jewel Ridge Coal Corp. office building destroyed.
Richmond, Va.—Richmond Foundry & Manufacturing Co. machine shop damaged.
Salem, Va.—Richardson's Super Market, dentist's office, H. R. Johnson Furniture Co. and apartment in two buildings, damaged.
Elma, Wash.—Decker Shake Mill destroyed.
Kennewick, Wash.—Bestway Building Center destroyed.
Seattle, Wash.—Lake Hardware Trailer Co. destroyed. Explosion.
Seattle, Wash.—Northwest Horseless Carriage Club destroyed.
Seattle, Wash. — Seattle Gun Club building damaged.
Burnsville, W. Va.—W. E. Marple Co. general store and building housing restaurant, poolroom and apartments, destroyed; adjoining feed store damaged.
Woodville, W. Va.—Saunders Lumber Co. destroyed. Overheated gas stove.
Madison, Wis. — Bay Short Shopping Center damaged.
Milwaukee, Wis.—Winnebago Auto Replacement Co. and apartments damaged.
Halifax, N. S.—Theater Arts Building owned by Roman Catholic Episcopal Corp. virtually destroyed. □□

Obituaries

Joseph E. Lockwood, Sr.

Joseph E. Lockwood, Sr., retired U. S. Navy fire marshal, Eighth Naval District, died February 3 at Los Angeles, Calif.

The popular and widely known marshal entered the fire service in 1924 as a member of the Plainfield, N. J., Fire Department. During World War II, he served first in Naval Intelligence and later as fire chief, U. S. Naval Training Center, Bainbridge, Md. He returned to the Plainfield department briefly after the war, and in 1946 accepted a position as fire chief at a naval installation in Norfolk, Va. In 1950 he was promoted to fire marshal, Eighth Naval District, with headquarters in New Orleans. He retired on disability due to a heart condition in 1958 and took up residence in California.

Marshal Lockwood was a member of the International Association of Fire Chiefs and the International Association of Arson Investigators. He has frequently lectured at Purdue University Arson Seminars and at Texas A&M College. An article "Radiation Hazards of Fire Fighting," authored by him appeared in the February issue of FIRE ENGINEERING.

A surviving son, Joseph E. Lockwood, Jr., is a member of the Los Angeles Fire Department.

Ex-Chief L. M. Funk

Leroy M. Funk, 68, retired chief of the Dallas, Tex., Fire Department, died December 22 at Sherman, following a heart attack. Chief Funk headed the Dallas department from 1939 to 1946. He was a resident of Sadler at the time of his death.

Harvey W. Crutchfield

Assistant Chief Harvey W. Crutchfield, formerly in charge of the Los Angeles County Fire Department's Division I, died February 12. He joined the department on January 1, 1927 as a fireman in the Flintridge station. On July 27, 1953 he was promoted to assistant chief in charge of special services division and a year later was transferred to Division I. He retired from the department on February 1.

Cliff Dektar

Howard Welcher

Howard Welcher, 72, retired special agent of the National Board of Fire Underwriters, died January 23 at his home in Charleston, W. Va., after a long illness.

Mr. Welcher joined the National Board as a special agent on February 1, 1930, and retired after over 28 years of service on October 1, 1958. He served in the West Virginia state fire marshal's office before joining the National Board.

John F. Finnegan

Chief John F. Finnegan, 69, Richmond, Va., Fire Department, died January 29 following a stroke suffered a few days earlier. The popular and widely known fire fighter joined the department in 1911. He became a lieutenant in 1913, captain in 1916, battalion chief in 1937 and was named chief on October 1, 1944.

He was a member of the International Association of Fire Chiefs, the Southeastern Association of Fire Chiefs and the Virginia State Fire Chiefs Association. Surviving are three sons; two of them, Deputy Chief John F. Finnegan, Jr. and Fireman William J. Finnegan, are members of the Richmond department.

Irving W. Johnson, Sr.

Chief Stricken at Fire

Fire Chief Lewis J. Jessome, 69, Sydney Mines, Nova Scotia, Volunteer Fire Department, died early on the morning of January 29 while directing his men at a mutual aid fire in North Sydney. He suffered a heart attack and was declared dead on arrival at the hospital.

Chief Jessome, a veteran of nearly 49 years' service, has headed the Sydney Mines department for the past 11 years. For 25 years previous he was deputy chief. He was immediate past president of the Maritime Association of Fire Fighters. □□

Eastern Underwriters Sponsor Scholarships

Fifteen scholarships at the University of Maryland's College of Engineering have been sponsored by the seven fire insurance rating organizations in the Eastern Underwriters Association. Worthy applicants will be selected from among 1959 high school graduates in 11 states and the District of Columbia. These include Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, New Jersey, Pennsylvania, Rhode Island and Vermont.

Each scholarship will include the full four-year tuition plus room and board on the campus. Students will have summer employment with the rating organization to which they are assigned and each will agree to serve that organization for at least four years after graduation.

The fire protection curriculum at the University of Maryland, under the direction of Professor John L. Bryan, leads to a B.S. degree in fire protection. Preliminary selection of students will be by the scholarship committee, EUA, pending formal acceptance of the applicant by the university. Preference will be given to deserving high school students with good scholastic records, plus a desire to serve the fire insurance business.

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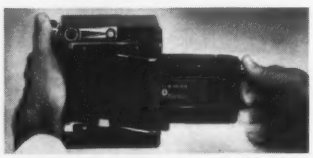

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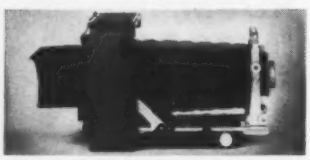

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OKLAHOMA CITY GOES . . . CIRCUL-AIR

Chief Haskell Graves of Oklahoma City says: "When we ordered dryers recently for new stations #14, 24 and 25, our department and Circul-Air were not strangers. In fact, we 'went CIRCUL-AIR' over 10 years ago; all new houses and remodeled stations since then have been so equipped. **We now have 20 of them in service none of which has ever required any replacement parts or service."**

CHIEF HASKELL GRAVES
OKLAHOMA CITY, OKLAHOMA

OVER 5000 Fire Departments Now CIRCUL-AIR Their Hose

APPROVED

The ORIGINAL Electric Hose Dryer

- Eliminates Ugly Hose Towers
- Dries Hose in a Few Hours
- *No* Radiant Heat—Can't Injure Hose
- Dries Fire Clothing, Too
- Keeps *All* Hose Ready for Service
- Reduces Station Construction Cost

Roto-Jet

"Automatic"
FIRE HOSE WASHER

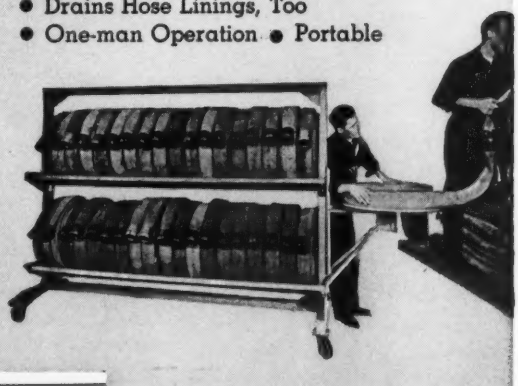
WASHES • RINSES • DRAINS

- Hose is Self-propelled
- Washes Uniformly—Including Edges
- Uses Clear Water or Detergents
- Drains Hose Linings, Too
- One-man Operation • Portable

Porto-RAK

MOBILE HOSE STORAGE AND LOADING UNIT

- Racks 1800 ft. 2½" Hose
- Equipped with Locking Casters
- Detachable Turn-table to Re-load Truck
- Stores in a 9 ft. Space
- Moderately Priced—Shipments from Stock



THE CIRCUL-AIR CORPORATION 575 EAST MILWAUKEE DETROIT 2, MICHIGAN

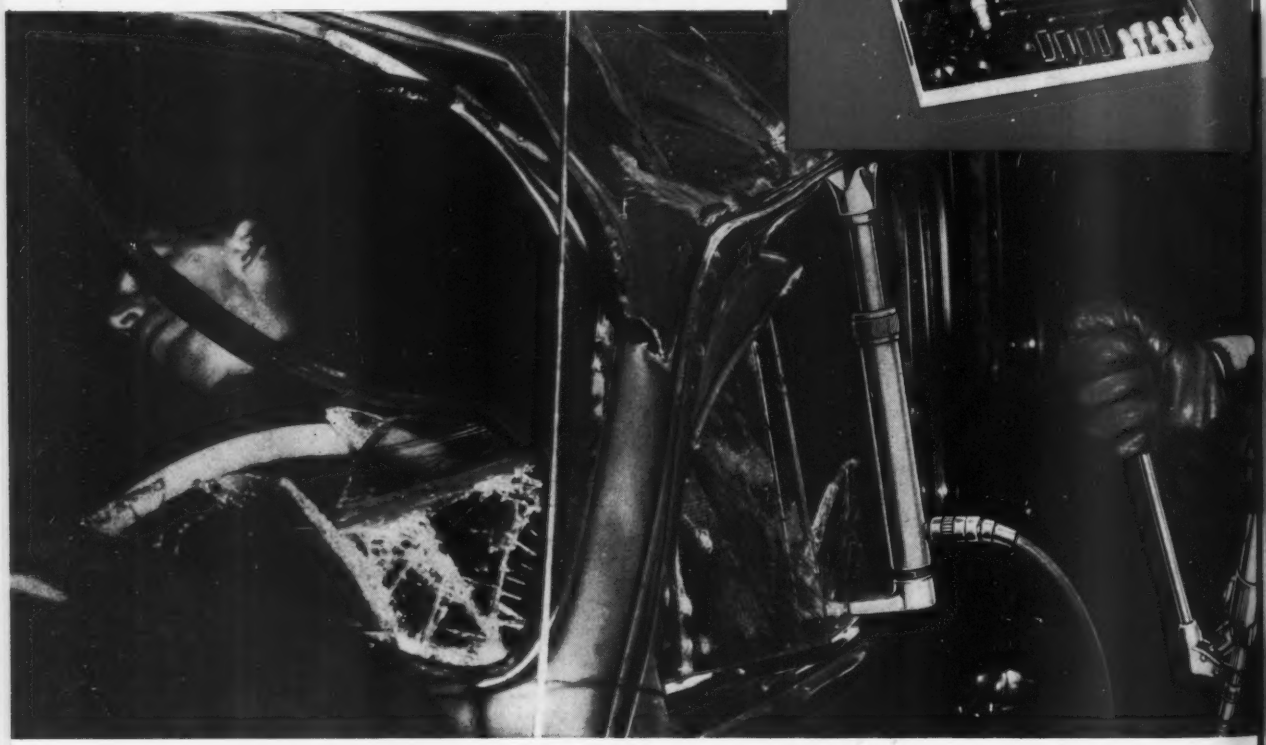
Write for
COMPLETE DETAILS

where can you use Porto-Power:

- raising wrinkled beams?
- lifting piled debris?
- opening car doors?
- bracing tunnel walls?
- releasing elevator victims?
- freeing trapped workmen?

there are a thousand and one more uses!

Complete assortment of work attachments lets you push, pull, spread, lift, clamp, and press to help extricate the victim.



M-S-A® PORTO-POWER* HYDRAULIC RESCUE EQUIPMENT

frees accident victims with tons of controlled power

M-S-A Porto-Power equipment saves lives. The principle is simple. The applications are wide.

The business end of Porto-Power is a hand-powered hydraulic pump connected by a long, flexible hose to a hydraulic ram. Quick, adaptable attachments offer a number of combinations for rescuing trapped victims.

You can work from any direction with Porto-Power. The ram works on its side, upside-down, or at any angle. Mere *pounds* of handle effort on the pump give a rescuer *tons* of power to free a victim.

Porto-Power Hydraulic Rescue Equipment is made by Blackhawk for MSA in three versatile sets: 4-ton, 10-ton, and 10 and 20-ton. Each set is available with a carefully selected assortment of attachments. Compact carrying case has easy-access compartments.

Write us for illustrated bulletin: Mine Safety Appliances Company, Pittsburgh 8, Pennsylvania. In Canada: Mine Safety Appliances Company of Canada, Ltd., Toronto 4, Ontario.

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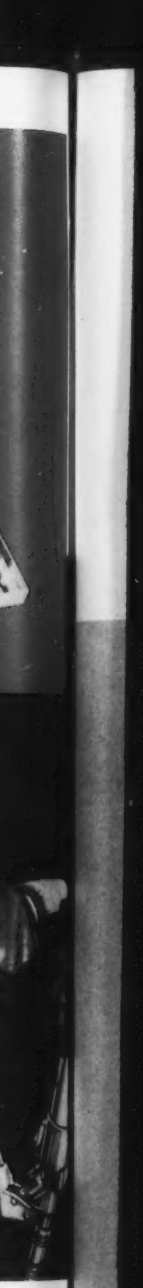
Every day—in many ways—MSA products safeguard millions of lives



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